



CITY OF GARDEN GROVE OFFICE OF THE CITY CLERK

*Safeguard all official records of the City.
Conduct municipal elections and oversee legislative administration.
Provide reliable, accurate, and timely information to the
City Council, staff, and the general public.*

January 29, 2020

Request # 5373
Requester: Eric Young
Company: AEI Consultants

Re: 7341 Anaconda Avenue

Dear Mr. Young,

Enclosed are the records found concerning the history of the above-mentioned site(s), especially as it pertains to fire code violation history, permits, the use, storage, or disposal of hazardous substances, and the installation or removal of underground flammable or combustible liquid storage tanks.

The City of Garden Grove Fire Department has utilized its best efforts to locate the records requested. The City does not provide records on spills, leaks and clean-up, as that information is provided through the County of Orange Health Department.

Sincerely,

Amanda Pollock
City of Garden Grove
City Clerk's Office

Steven R. Jones

Mayor

Stephanie Klopfenstein

Mayor Pro Tem - District 5

George S. Brietigam

Council Member - District 1

John R. O'Neill

Council Member - District 2

Thu-Ha Nguyen

Council Member - District 3

Patrick Phat Bui

Council Member - District 4

Kim Bernice Nguyen

Council Member - District 6



FIRE SAFETY SURVEY
GARDEN GROVE FIRE DEPARTMENT

11301 Acacia Parkway, Garden Grove, CA 92842
Bus 714-741-5600 Fax 714-741-5640

File # 8891
Fire District 2314
Inspector FPB Shift N
Next Insp 5 / 2010

Occupant or DBA: ADVANCED CHEMISTRY & TECHNOLOGY
Business Phone: 714 373-2837
Address: 7341 ANACONDA Ave Suite Zip 92841
Business Owner: Jordan Company Phone
Emergency Contact: [Redacted] Phone [Redacted]
Group F-1 Load Sprinklers F/P/N F 5 yr. Cert. 11/08/2007 Haz Mat [checked]

Fire Permits
811031 HIGH-PILED COMBUSTIBLE STOCK, 801031 HAZARDOUS MATERIALS - use, handling or storage, 741031 NON-FLAM. COMP. GASES, 491011 HOT WORK - welding and cutting / open flame,

An inspection at the above location/occupancy revealed the following violations(s)

SIGNS

- Provide address visible from the street (CFC 505.1)
Provide hazardous materials warning signs (CFC 2703.5)
EXITS: 2ND CONTAINMENT DOOR LATCH, CONTAINMENT EXIT DOOR PANIC HARDWARE, SHIPPING/RECEIVING EXIT DOOR
Provide/maintain approved panic hardware (CFC 1008.1.9)
Remove locks, chains, bolts or bars from exit door (CFC 1008.1.8)
Remove exit door/hardware (CFC 1008.1.8.5)
Location
Remove exit obstruction (CFC 1028.3)
Provide/maintain illuminated exit sign(s) (CFC 1011.2)
EMERGENCY LIGHTS BY MAIN ELECTRICAL PANELS
Provide and maintain approved emergency lighting (CFC 1006.1)

ASSEMBLY OCCUPANCIES

- Post maximum occupancy load sign (CFC 1004.3)
Remove combustible decorative material (CFC 807.1.2)
Remove storage under stairway (CFC 315.2.2)

ELECTRICAL SAFETY PRE-CAUTION:

- Discontinue use of extension cords (CFC 605.6)
Keep 30" clear for access in front of electrical panel (CFC 605.3)
Provide/replace electrical cover socket power strip (CFC 605.1)
Location

HAZ-MAT SAFETY PRE-CAUTIONS

- Complete Hazardous Materials Disclosure packet 714-741-5636 (CFC 2701.5.1)
Provide approved cabinet if more than 10 gal. flammable liquids (CFC 3404.3.4.3)
Provide approved safety containers(s) for flammable liquids (CFC 3404.3.1)

MISCELLANEOUS

- Lower storage 18" below sprinklers or 2' from ceiling (CFC 315.2.1) MAINTENANCE ROOM SECURE GAS CYLINDER PROPANE CYLINDERS NEAR CONTAINMENT
Secure compressed gas cylinders (CFC 3003.5.3) SECURE 55 gal. DRUMS TO PALETS
Post Business License Fire Department Permit (CFC 105.6)

NO VIOLATIONS

ACCESS

- Provide outside Knox Box (CFC 506.1)
Remove obstructions to fire apparatus access (CFC 503.4)

FIRE PROTECTION EQUIP. AND SYS.

- Provide extinguishers 2A10BC 40BC K (CFC 906.1)
Service and tag extinguisher(s) (CFC 901.6)
Hang extinguisher(s) 3.5'-5' from floor (Title 19, Sec.567.6)
Clean filters, ducts, hood above cooking surface (CFC 904.11.6.4)
Service auto-extinguishing system semi-annually (CFC 904.11.6.3)
5 yr certification on sprinkler/standpipe system (Title 19, Sect. 904)

ADDITIONAL VIOLATIONS AND/OR NOTES

FIRE DOOR ANNUAL TEST OK 8/3 PLUG HOLE IN CONTAINMENT ROOM

Business representative signature [Signature] Date 8/3/10
Inspector ID # TRAVIS MELLEN # 2867 Date 8/3/10

Cleared 8/18/10 Mailback card due 1/1/10 Re-inspection date 8/17/10 9:00AM Final Notice 1/1/10

GARDEN GROVE



FIRE DEPARTMENT

HAZARDOUS MATERIALS DISCLOSURE PROGRAM

REPORTING FORMS PACKET

SHORT VERSION

| | |
|-----------------------|---|
| FOR OFFICIAL USE ONLY | |
| FACILITY ID NO. | <u>8891</u> |
| BUSINESS NAME | <u>Advanced Chemistry & Technology</u> |
| BUSINESS ADDRESS | <u>7341 Anaconda Ave</u> |
| APPROVED BY | <u>G</u> DATE <u>4/09</u> |
| NEW BUSINESS | <input type="checkbox"/> YES <input type="checkbox"/> NO UPDATE _____ |
| PICK | <u>4D</u> BUSLIST <u> </u> CALARP: <u> </u> CUPA: <u> </u> GIS <u> </u> |
| FEE | _____ |



CITY OF GARDEN GROVE FIRE DEPARTMENT

11301 Acacia Parkway, Garden Grove, CA 92842 (714) 741-5600 (714) 741-5636

FORM 1

Hazardous Materials Business Information Form

Page 1 of 1 3

BUSINESS INFORMATION

| | | | | | |
|----------------------------------|--|----------------------|------|----------------|-------|
| FACILITY # (Supplied by GGFD) | 3 0 0 3 5 | BEGINNING DATE | 1 | ENDING DATE | 2 |
| BUSINESS NAME | Advanced Chemistry & Technology, Inc. (ACTECH) | | | BUSINESS PHONE | 5 |
| BUSINESS SITE ADDRESS | 7341 ANACONDA AVE | | | | 6 |
| CITY | GARDEN GROVE | STATE | CA | ZIP | 92841 |
| DUN & BRADSTREET | 10 | SIC CODE (4 DIGIT #) | 2891 | FIRE DISTRICT | 12 |
| COUNTY | ORANGE | | | | 13 |
| BUSINESS OPERATOR NAME | 14 | OPERATOR'S PHONE | 15 | | |

BUSINESS OWNER

| | | | |
|-----------------------|------------------------|-------------|--------------|
| OWNER NAME | The Jordan Company | OWNER PHONE | 212 572 0800 |
| OWNER MAILING ADDRESS | 767 5th Ave 48th Floor | | |
| CITY | NEW YORK | STATE | NY |
| | | ZIP | 10153 |

ENVIRONMENTAL CONTACT

| | | | |
|-----------------|------------|---------------|------------|
| CONTACT NAME | [REDACTED] | CONTACT PHONE | [REDACTED] |
| CONTACT MAILING | [REDACTED] | | |
| CITY | [REDACTED] | STATE | CA |
| | | ZIP | [REDACTED] |

PRIMARY

EMERGENCY CONTACTS

SECONDARY

| | | | |
|----------------|--------------------|----------------|--------------------|
| NAME | [REDACTED] | NAME | [REDACTED] |
| TITLE | V.P. Operations | TITLE | VP. MFG |
| BUSINESS PHONE | 714 373 2837 x 156 | BUSINESS PHONE | 714 373 2837 x 131 |
| 24-HR. PH | [REDACTED] | 24-HR. PHONE | [REDACTED] |
| PAGER # | [REDACTED] | PAGER # | [REDACTED] |

ADDITIONAL LOCALLY COLLECTED INFORMATION

| | | | |
|---|-------------------------------|----------------------|---------------------------------|
| DESCRIBE THE TYPE OF BUSINESS OPERATION: | Aircraft Sealant Manufacturer | TOTAL # OF EMPLOYEES | 47 |
| BILLING ADDRESS (IF DIFFERENT FROM ABOVE) | SAME AS ABOVE | | ATTENTION |
| PROPERTY OWNER NAME | CAMBAL GRIFFITH TRUST | ADDRESS | 3029 Wilshire Blvd Santa Monica |
| | | PHONE | 310 828 7547 |

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

| | | | |
|------------|------------|------|---------|
| AGENTATIVE | [REDACTED] | DATE | 4/29/09 |
| | [REDACTED] | | |

| | | | |
|-----------------|--------|--|--------|
| TITLE OF SIGNER | VP MFG | | VP MFG |
|-----------------|--------|--|--------|



CITY OF GARDEN GROVE
 11301 ACACIA PARKWAY
 GARDEN GROVE, CALIFORNIA 92842
 (714) 741-5636

CUPA

FACILITY INFORMATION

BUSINESS ACTIVITIES

Page 1 of ___

I. FACILITY IDENTIFICATION

| | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|--|--|--|--|--|--|--|--|------------------------------------|--------------|
| FACILITY ID# | 3 | 0 | 0 | 3 | 5 | | | | | | | | | 1. EPA ID # (Hazardous Waste Only) | 2. |
| | | | | | | | | | | | | | | | CAR000169516 |

BUSINESS NAME (Same as FACILITY NAME or DBA-Doing Business As) 3.

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page.

Does your facility...

If Yes, please complete these pages of the UPCF...

A. HAZARDOUS MATERIALS

Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?

YES NO

4.

HAZARDOUS MATERIALS INVENTORY - CHEMICAL DESCRIPTION (Form 3)

B. UNDERGROUND STORAGE TANKS (USTs)

- Own or operate underground storage tanks?
- Intent to upgrade existing or install new USTs?
- Need to report closing a UST?

YES NO

5.

UST FACILITY (Formerly SWRCB Form A)
 UST TANK (one page per tank) (Formerly Form B)

YES NO

6.

UST FACILITY
 UST TANK (one per tank)
 UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (Formerly Form C)

YES NO

7.

UST TANK (closure portion-one page per tank)

C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs)

Own or operate ASTs above these thresholds:
 - any tank capacity is greater than 660 gallons, or
 - the total aggregate capacity for the entire facility (ASTs, drums and portable containers) greater than 1,320 gallons?

YES NO

8.

NO FORM REQUIRED TO CUPAS

D. HAZARDOUS WASTE

- Generate hazardous waste?
- Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC §25143.2)?
- Treat hazardous waste on site?
- Treatment subject to financial assurance requirements (for Permit by Rule and Condition Authorization)?
- Consolidate hazardous waste generated at a remove site?
- Need to report the closure/removal of a tank that was classified waste and cleaned onsite?

YES NO

9.

EPA ID NUMBER - provide at the top of this page

YES NO

10.

RECYCLABLE MATERIALS REPORT (one per recycler)

YES NO

11.

ONSITE HAZARDOUS WASTE TREATMENT - FACILITY (Formerly DTSC Forms 1772)
 ONSITE HAZARDOUS WASTE TREATMENT - UNIT (one page per unit) (Formerly DTSC Forms 1772A,B,C,D and L)

YES NO

12.

CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)

YES NO

13.

REMOTE WASTE/CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC Form 1196)

YES NO

14.

HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)

E. LOCAL REQUIREMENTS

Cal-ARP: California Accidental Release Prevention Program
 H&SC Chapter 6.95, Article 2, §25531 et seq
 — Stationary Source with more than a Threshold Quantity of a Regulated Substance in a Process

YES NO

15.

REGULATED SUBSTANCE REPORTING FORM (Orange County CUPA)

**GARDEN GROVE FIRE DEPARTMENT
BUSINESS EMERGENCY PLAN**

A BUSINESS IS REQUIRED BY LAW TO NOTIFY THE GARDEN GROVE FIRE DEPARTMENT WITHIN 30 DAYS OF ANY OF THE FOLLOWING EVENTS:

1. Change of business address.
2. Change of business ownership.
3. Change of business name.
4. Cessation of business operation (quitting business).
5. Use or handling of a previously undisclosed hazardous material.
6. A 100% increase in the quantity of a previously disclosed hazardous material.

IN ADDITION, IF A BUSINESS HANDLES EXTREMELY (ACUTELY) HAZARDOUS MATERIALS, THE BUSINESS MUST NOTIFY THE GARDEN GROVE FIRE DEPARTMENT WITHIN 30 DAYS OF ANY OF THE FOLLOWING EVENTS:

1. A modification, change, or addition to your facility which either increases your usage of extremely hazardous materials by 10% or greater, or substantially increases the risk in handling extremely hazardous materials at that address.

Your business is required by State law to retain a copy of this entire Business Plan, chemical inventory, material safety data sheets and site maps, for review by Fire Department personnel. State where your Disclosure and Emergency Business Plan will be kept.

Manufacturing Manager's office.

Show location on site map also using symbol in the legend.

Note: A fee is charged for a replacement copy from the Garden Grove Fire Department.

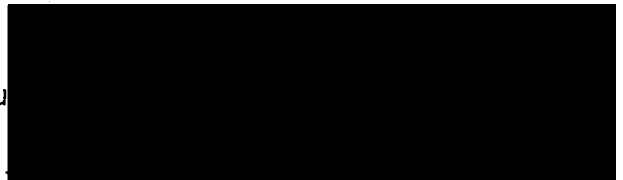
I certify, under penalty of perjury, that the enclosed information is true and correct to the best of my knowledge.

Signature

Name:

Title:

Date:



VP Manufacturing

7 - May - 2009

**GARDEN GROVE FIRE DEPARTMENT
HAZARDOUS MATERIALS DISCLOSURE PROGRAM
BUSINESS EMERGENCY PLAN**

EMERGENCY NOTIFICATIONS:

A handler of hazardous materials is required to immediately report any release or threatened release of hazardous materials to the Garden Grove Fire Department. Failure to do so may result in criminal and/or civil prosecution.

REQUIRED NOTIFICATIONS:

In the event of a release or threatened release of hazardous materials, it is State law to notify each of the following agencies.

| AGENCY | PHONE NUMBERS |
|--|-------------------------------------|
| Garden Grove Fire Department, Police, Paramedics | 911 |
| Office of Emergency Services (OES) | (800) 852-7550 or (916) 427-4341 |
| National Response Center | (800) 424-8802 |
| Individual responsible for calling these agencies: | |

Provide the following information when you call:

- Name of the person and business
- Business street address
- Location of the incident
- Type of incident (spill, gas release, etc.)
- The name(s) of the chemical substance(s) involved
- The amount of the chemical substance(s) involved
- The extent of injuries, if any
- Possible hazards to human health and/or the environment
- Emergency call-back phone number (_____) _____

If a chemical spill or release at your facility could create a toxic cloud or a liquid stream that could drift beyond your facility, then, identify nearby facilities that could be in imminent danger.

To the North
 Facility Tenants change often - unknown Phone () _____
 Facility _____ Phone () _____

To the South
 Facility Catalina Cylinders Phone (714) 890-0999.
 Facility _____ Phone () _____

To the East
 Facility Tenants change often - unknown Phone () _____
 Facility _____ Phone () _____

To the West
 Facility Pacific Polymers Phone (714) 898-0025
 Facility _____ Phone () _____

**GARDEN GROVE FIRE DEPARTMENT
HAZARDOUS MATERIALS DISCLOSURE PROGRAM
BUSINESS EMERGENCY PLAN**

OPTIONAL NOTIFICATIONS:

1. Hazardous Waste Contractor
Name: UNIVAR (323) 837-7022
2. Insurance Company
Name: Lockton (816) 960-9000
3. Poison Control Center - 24-Hour 1 (800) 876-4766

EVACUATION PLANS AND PROCEDURES:

Evacuation Alarms - describe the type of alarm signals that will be used to start an evacuation at this facility (vocal, paging system, manual alarm, etc.):

Paging system, manual alarm, vocal.

Evacuation Drills

Evacuation drills and records proving you have held such drills are required by California law. The drill record does NOT have to be provided to the Fire Department with this business plan, but shall be maintained for a period of three years and shall be available for review by Fire Department personnel. The record shall include the facilitator's name, title, facility location, date of drill, and the signature of the facilitator. For your convenience, a form for recording list information is included with this packet. Make additional copies as needed.

The following four forms:

- A) Evacuation Drill Record
- B) Emergency Coordinator Task Completion Sheet
- C) Emergency Chemical Disclosure Form
- D) Training Record

These forms are designed to assist you in organizing, planning and maintaining permanent records. They are to be retained at the business, and may be requested by emergency responders upon their arrival or during your annual fire inspection.

**GARDEN GROVE FIRE DEPARTMENT
EVACUATION DRILL RECORD**

Business Name: Advanced Chemistry & Technology, Inc.

Street Address: 7341 ANACONDA Ave, Garden Grove.

Date of Evacuation Drill: September 18, 2008

Brief Description of Drill: Simulation of emergency, sounded alarm by paging system, evacuate buildings, accounted for everyone.

Facilitator's Name: Stephane Pyrek

Facilitator's Title: VP. MFG

I hereby certify, under penalty of perjury, that I facilitated the evacuation drill as described above.

Signature of Facilitator: Stephane E. Pyrek

Date Signed: 7 - May - 2009

Date of Evacuation Drill: _____

Brief Description of Drill: _____

Facilitator's Name: _____

Facilitator's Title: _____

I hereby certify, under penalty of perjury, that I facilitated the evacuation drill as described above.

Signature of Facilitator: _____

Date Signed: _____

THIS RECORD TO BE RETAINED AT THE BUSINESS.
MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.

**GARDEN GROVE FIRE DEPARTMENT
TRAINING RECORDS
FOR HAZARDOUS MATERIALS AND EMERGENCIES**

In addition to planning and conducting training programs, each employer should maintain training records for no less than three years. For your convenience, a form for recording this information is provided for your use. These reports do not have to be mailed back to the Fire Department with the Business Plan, but should be available to Fire Department personnel upon request. Make as many additional copies of these forms as you need.

Employee Name: Chris schatler
Employee Title: Receiving Operator
Training Provided: HAZWOPER REFRESHER

Date Completed: Feb 2009

Employee Name: All AC TECH Manufacturing & Packaging.
Employee Title: Various
Training Provided: 49 CFR - Hazardous Material Training

Date Completed: APRIL 2009

Employee Name: _____
Employee Title: _____
Training Provided: _____

Date Completed: _____

Employee Name: _____
Employee Title: _____
Training Provided: _____

Date Completed: _____

THIS RECORD TO BE RETAINED AT THE BUSINESS.
MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.

**GARDEN GROVE FIRE DEPARTMENT
BUSINESS EMERGENCY PLAN
EVACUATION PLANNING**

Describe the evacuation routes, emergency exits, and staging areas for employees in each work area at this facility. (A "staging area" is a specific location where your personnel meet after an evacuation, where you make sure everyone evacuated safely.)

-
1. Working area: Manufacturing Area EAST Portion of Building
Evacuation route: EAST EXIT TO STAGING AREA.
Emergency exits: EAST & NORTH SIDES OF BUILDING
Staging area: EAST PARKING LOT
-
2. Working area: OFFICE & LAB - EAST Portion of Building
Evacuation route: South exit then east to staging area
Emergency exits: SOUTH & EAST SIDES of building.
Staging area: EAST PARKING LOT
-
3. Working area: Packaging - West Portion of Building
Evacuation route: West exit then east to staging area
Emergency exits: North and West side of BUILDING
Staging area: EAST PARKING LOT
-
4. Working area: OFFICE - WEST Portion of Building
Evacuation route: South then east to staging area.
Emergency exits: South side of building
Staging area: _____
-
5. Working area: _____
Evacuation route: _____
Emergency exits: _____
Staging area: _____
-

MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.

**GARDEN GROVE FIRE DEPARTMENT
BUSINESS EMERGENCY PLAN**

EMPLOYEE RESPONSIBILITIES:

Every business is required to develop an emergency plan. Part of this plan shall include the pre-assignment of important emergency duties to specific employees, and training of employees to carry out these emergency duties. Provide this information below for those employees who will carry out the emergency duties:

JOB TITLE: Emergency Coordinator

EMERGENCY FUNCTION(S): Response to Scene, directs, reports with Public emergency response units (Fire, police, etc)

- a. George Barajas
- b. Steven Rivera
- c. Jon Book
- d. _____

JOB TITLE: First Responder

EMERGENCY FUNCTION(S): 1st Person Reporting to Scene.

- a. Ron Casseyre
- b. Stephan Pyrek
- c. Chris Schachter
- d. _____

JOB TITLE: Team Lead

EMERGENCY FUNCTION(S): Takes rolls, accounts for employees, reports missing to Emergency Coordinator.

- a. Jay Becton
- b. Tom Coughlin
- c. Ron Casseyre
- d. _____

MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.

**GARDEN GROVE FIRE DEPARTMENT
BUSINESS EMERGENCY PLAN**

TRAINING:

Every business handling hazardous materials above the minimum limits shall provide training for their employees in the following area:

- A. Method for safe handling of hazardous materials.
- B. Procedures for notification and coordination with emergency agencies, in the event of a spill or threatened spill.
- C. Use of emergency response equipment and supplies under the control of the handler.
- D. Emergency mitigation procedures in response to a release or threatened release hazardous material.
- E. Tasks assigned to employees in the event of a hazardous materials emergency.
- F. Evacuation procedures.

Describe the type of training programs you either are currently using or will use during the next year to provide the required employee training.

Training by outside agency to satisfy
OSHA Hazardous Waste Operators and
Emergency Response Standard
29 CFR 1910.120 (e)(8)(q)(8) and
CCR 5192 (e)(9)

MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.



Hazardous Material Disclosure

Business Information / Chemical Inventory / Business Emergency Plan



GARDEN GROVE FIRE DEPARTMENT
11301 Acacia parkway
Garden Grove, CA 92840
Bus. (714) 741-5600 Fax (714) 741-5640
Hazardous Materials Coordinator
(714) 741-5636

Address: 7341 ANACONDA
Occupant or DBA: ADVANCED CHEMISTRY & Technology
Owner/Manager: GEORGE E BARRAZA

Date: 4/9/09
File No: _____
Phone: (626) 945-1336

California Health and Safety Code, Section 6.95, you are required to properly complete the Business Emergency Plan (BMP) packet. You are required to return the BEP packet, Hazardous Materials Disclosure Forms, and all material safety data sheets within fifteen (15) days to the Garden Grove Fire Department. HazMat Coord. (714) 741-5636

An inspection at the above location/occupancy revealed the following violation(s):

Violation(s): CA Health and Safety Code Chapter 6.95, Article 1 and Title 19, §2729 et seq., California Code of Regulations (CCR)

- Complete Hazardous Materials Disclosure packet, HSC Chapter 6.95, Title 19 Div 2 Chapter 3, CFC 8001.3.2
- Failure to submit a Business Emergency Plan. [HSC 25505(a)(1)]; CFC 8001.3.2
- Failure to review and/or revise the Business Emergency Plan as required [HSC 25505(b)&(c)]
- Chemical inventory is incomplete and/or requires update. [HSC 25509]
- The Emergency Response Plan is inadequate and/or does not address the following issues and shall be immediately revised and resubmitted: [HSC 25504(b)&(c)]
 - Notification Procedures
 - Mitigation Procedures
 - Evacuation Procedures
 - Employee Training
- Business Owner/Operator page is incomplete or needs to be updated. [HSC 25509]
- Failure to provide name, title, and 24-hour number of emergency contact(s). [HSC 25509(a)(7)]
- Site Map is incomplete or insufficient. [HSC 25509]
- Failure to report a release or threatened release. [HSC 25507]
- Failure to report a change in business or chemical inventory within 30 days of the following event(s): [HSC 25510]
 - 100% or more increase in the quantity of a disclosed material
 - Addition of a previously undisclosed material
 - Change in business address
 - Change in business ownership
 - Change of business name
 - Other (See comments below):

Violation(s): California Fire Code 2001, Articles 79 & 80, Title 19 Part 9, California Code of Regulations (CCR)

- Provide for secondary containment for hazardous materials liquids and solids (CFC 8003.1.3.3)
- Provide spill control for hazardous materials liquids (CFC 8003.1.3.2)
- Provide approved cabinet if more than 10 gallons of flammable liquids (CFC 7902.5)
- Provide placarding and signs (NFPA 704, CFC Article 79 §7901.9, Article 80 §8001.7-8)
- No Violations Found

Additional Violations and/or Notes:

NFPA 704 PLACARD FOR RCRA STORAGE AREA IN REAR OF BUILDING

Responsible Party: _____ Re-inspection Date: MAY 4TH 2009

The above are violations of California law and require immediate correction. Failure to correct violations is subject to civil penalties.

Fire Dept. Inspector: Captain Danovich ID #: 4212

Condition Upon Re-inspection: _____ Date: 4-9-09

Complies 5/6/09 Captain Janou



**FIRE SAFETY SURVEY
GARDEN GROVE FIRE DEPARTMENT**

11301 Acacia Parkway, Garden Grove, CA 92842
Bus 714-741-5600 Fax 714-741-5640

File # 317
Fire District 2314
Inspector FPB Shift N
Next Insp 5 / 2009

Occupant or DBA ADVANCED CHEMISTRY & TECHNOLOGY Business Phone 714 373-2837

Address 7341 ANACONDA Ave Suite _____ Zip 92841

Business Owner Josef Boier George E BANAZA 626-945-1336 Phone 848-761-3764

Emergency Contact RON CASSAYRE Phone 562 212-6060

Group H2 Load _____ Sprinklers F/P/N F 5 yr. Cert. 11/08/2007 Haz Mat

Fire Permits

741031 NON-FLAM. COMP. GASES, 491011 HOT WORK - welding and cutting / open flame, 801031 HAZARDOUS MATERIALS - use, handling or storage, 811031 HIGH-PILED COMBUSTIBLE STOCK,

An inspection at the above location/occupancy revealed the following violations(s)

SIGNS

- Provide address visible from the street (CFC 505.1)
- Provide hazardous materials warning signs (CFC 2703.5)

EXITS

- Provide/maintain approved panic hardware (CFC 1008.1.9)
- Remove locks, chains, bolts or bars from exit door (CFC 1008.1.8)
Remove lock from exit door
- Remove exit door/hardware (CFC 1008.1.8.5)
Remove exit door hardware
- Remove exit obstruction (CFC 1028.3)
Remove exit obstruction
- Provide/maintain illuminated exit sign(s) (CFC 1011.2) 12' ALL Doors Location _____
- Provide and maintain approved emergency lighting (CFC 1006.1)

ACCESS

- Provide outside Knox Box (CFC 506.1)
- Remove obstructions to fire apparatus access (CFC 503.4)

FIRE PROTECTION EQUIP. AND SYS.

- Provide ___ extinguishers ___2A10BC ___40BC ___K (CFC 906.)
- Service and tag extinguisher(s) (CFC 901.6)
- Hang extinguisher(s) 3.5'-5' from floor (Title 19, Sec.567.6)
- Clean filters, ducts, hood above cooking surface (CFC 904.11.6.4)
- Service auto-extinguishing system semi-annually (CFC 904.11.6.3)
- 5 yr certification on sprinkler/standpipe system (Title 19, Sect. 904)

ASSEMBLY OCCUPANCIES

- Post maximum occupancy load sign (CFC 1004.3)
- Remove combustibile decorative material (CFC 807.1.2)
- Remove storage under stairway (CFC 315.2.2)

ELECTRICAL SAFETY PRE-CAUTION:

- Discontinue use of extension cords (CFC 605.6)
- Keep 30" clear for access in front of electrical panel (CFC 605.3)
- Provide/replace electrical ___cover ___socket ___power strip (CFC 605.1)

HAZ-MAT SAFETY PRE-CAUTIONS

- Complete Hazardous Materials Disclosure packet (CFC 2701.5.1)
314-741-5600
- Label if more than 10 gal. flammable (1.4.3)
- Label safety containers(s) for flammable (1.1)
- Label ___" below sprinklers or ___ 2' from ceiling

addresses

ADDITIONAL VIOLATIONS AND/OR NOTES

Remove 12' ALL Doors - Remove lock, - TEST FIREHOLE LINK FIRE ALARM

Business representative signature *Steve Wilber* Date 3/10/09
Inspector ID # 2867 Date 3/10/09

Cleared 3/24/09 Mailback card due 1/1 Re-inspection date 3/24/09 Final Notice 1/1



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|-------|-------|---|
| CHEMICAL LOCATION | Material Storage Area | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 |
| 6 | GRID # | G2-G7 | | |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|----------------------------|---|---|-----------------|--|---|----|
| CHEMICAL NAME | ZIRCONIUM (IV) N-PROPOXIDE | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | METAL ALKOXIDE | 9 | | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | | | |

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|--|-----------------------------------|----|-----------------------|---|--|--|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|----|----|----------------------|-----|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 20 | 19 | MAXIMUM DAILY AMOUNT | 200 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|----|----|----------------------|-----|----|---------------------|------|----|------------------|----|

| | | | | | | | | | |
|-------|-------------------------------------|---|----------------------------------|-----------------------------------|----------|----|-------------------|----------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 4 LB JAR | 25 |
| | | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | *If EHS amount must be in pounds. | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|------|---|--|------------|
| 1 75 | ZIRCONIUM (IV) N-PROPOXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 23519-77-9 |
| 2 25 | n-PROPANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 71-23-8 |
| 3 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 4 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

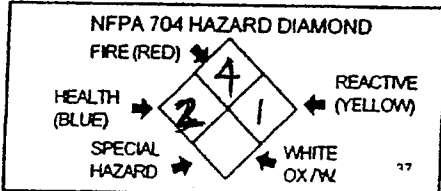
PLACARDING INFORMATION

UNDOT # UN 1993 33
 Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
 Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
 If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

MATERIAL SAFETY DATA SHEET

Manufacturer: Strem Chemicals, Inc.
7 Mulliken Way
Newburyport, MA 01950-4098

STREM CUSTOMER SERVICE: (978) 462-3191
CHEMTREC (EMERGENCY ONLY): (800) 424-9300
POISON CENTER: (800) 562-8236

SECTION 1 Product Identification

CHEMICAL NAME: Zirconium (IV) n-propoxide (23-28% free alcohol)
PRODUCT NUMBER: 93-4017
CAS REGISTRY NUMBER: 23519-77-9
FORMULA: Zr(OC3H7)4
EINECS NUMBER: 245-711-9
CHEMICAL FAMILY: metal alkoxide
SYNONYM: zirconium propanolate in n-propyl alcohol, 1-hydroxypropane

SECTION 2 Composition and Information on Ingredients

| INGREDIENT: | CAS# | % | ACGIH (TWA) | OSHA (PEL) |
|----------------|------------|----|----------------|----------------|
| Title Compound | 23519-77-9 | 75 | 5mg/m3 (as Zr) | 5mg/m3 (as Zr) |
| n-propanol | 71-23-8 | 25 | 200ppm | 500mg/m3 |

SECTION 3 Hazards Identification

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed. Irritating to skin, eyes and respiratory tract. Possible risk of impaired fertility, irreversible effects and harm to the unborn child.

PRIMARY ROUTES OF EXPOSURE: Inhalation, ingestion, contact with skin and eyes.

EYE CONTACT: If liquid contacts the eye, irritating solid zirconium oxide powder may form. N-propanol vapor may cause severe eye irritation.

SKIN CONTACT: Harmful in contact with skin. Dehydrating agent. Liquid will cause mild irritation of the skin.

INHALATION: Harmful by inhalation. Irritating to the nose, mucous membranes and respiratory tract and cause headache, dizziness, and drowsiness.

INGESTION: Harmful if swallowed. Ingestion may cause gastrointestinal distress, nausea, vomiting and headache.

ACUTE HEALTH EFFECTS: Harmful by inhalation, in contact with skin and if swallowed. Irritating to skin, eyes and respiratory tract. Possible risk of harm to the unborn child.

CHRONIC HEALTH EFFECTS: Possible risk of impaired fertility and irreversible effects. In animal studies n-propanol has acted as a mutagen, tumorigen and reproductive effector. Prolonged exposure can damage nerves, and liver.

NTP: No **IARC:** No **OSHA:** No

SECTION 4 First Aid Measures

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water for at least 10-15 minutes. A victim may need assistance in keeping their eye lids open. Get immediate medical attention.

SKIN EXPOSURE: Wash the affected area with soap and water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

INHALATION: Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.

INGESTION: Seek medical attention immediately. Keep the victim calm. Give the victim water (only if conscious).

SECTION 5 Fire Fighting Measures

FLASH POINT: 83 °F

AUTOIGNITION TEMPERATURE: no data

EXPLOSION LIMITS: no data

EXTINGUISHING MEDIUM: carbon dioxide, dry powder or foam

SPECIAL FIRE FIGHTING PROCEDURES: If involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: If involved in a fire this material may emit toxic organic fumes and zirconia dust.

UNUSUAL FIRE OR EXPLOSION HAZARDS: Flammable liquid. No unusual fire or explosion hazards.

SECTION 6 Accidental Release Measures

SPILL AND LEAK PROCEDURES: Eliminate all ignition sources. Avoid contact with water. Small spills may be adsorbed into diatomaceous earth, sand, or other suitable adsorbent, and swept up.

SECTION 7 Handling and Storage

HANDLING AND STORAGE: Store in a tightly sealed container in a cool dry place. If container is left open, product may adsorb moisture from the atmosphere and release 1-propanol vapor.

SECTION 8 Exposure Controls and Personal Protection

EYE PROTECTION: Always wear approved safety glasses when handling a chemical substance in the laboratory.

SKIN PROTECTION: Wear protective clothing and gloves.

VENTILATION: Material may form a vapor upon exposure to air. If possible, handle the material in an efficient fume hood.

RESPIRATOR: If ventilation is not available a respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 1910.134.

ADDITIONAL PROTECTION: No additional protection required.

SECTION 9 Physical and Chemical Properties

COLOR AND FORM: yellow liq.

MOLECULAR WEIGHT: 327.56

BOILING POINT (°C): no data

VAPOR PRESSURE: not applicable

SPECIFIC GRAVITY: 1.05

ODOR: alcohol odor

SOLUBILITY IN WATER: reacts with water

SECTION 10 Stability and Reactivity

STABILITY: moisture sensitive liquid

HAZARDOUS POLYMERIZATION: no hazardous polymerization

CONDITIONS TO AVOID: Keep away from moisture, heat and ignition sources including open flame and electrostatic discharge.

INCOMPATIBILITY: water, mineral acids, alkali metals, oxidizing agents, acid chlorides, and halogens

DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, organic vapors, and metal oxides and carbonates.

SECTION 11 Toxicological Information

RTECS DATA: No information available in the RTECS files. N-propanol: skin (rbt) mild; eye (rbt) draize:20 mg/24h moderate; oral (human-woman) LDLo: 5700 mg/kg; oral (rat) LDLo: 1870 mg/kg; inhalation (rat) lcl: 4000 ppm/4h; intraperitoneal (rat) LD50: 2164 mg/kg; inhalation (mouse) LC50 : 48 gm/m3.

CARCINOGENIC EFFECTS: n-propanol: Tumorigen

MUTAGENIC EFFECTS: n-propanol: Mutagen

TETRAOGENIC EFFECTS: n-propanol: Reproductive effector

SECTION 12 Ecological Information

ECOLOGICAL INFORMATION: No information available

SECTION 13 Disposal Considerations

DISPOSAL: Dispose of according to local, state and federal regulations.

SECTION 14 Transportation Information

SHIPPING NAME (CFR): Flammable liquids, N.O.S.

HAZARD CLASS (CFR): 3

ADDITIONAL HAZARD CLASS (CFR): NA

PACKING GROUP (CFR): III

UN ID NUMBER (CFR): UN# 1993

SHIPPING NAME (IATA): Flammable liquid, N.O.S.

HAZARD CLASS (IATA): 3

ADDITIONAL HAZARD CLASS (IATA): NA

PACKING GROUP (IATA): III

UN ID NUMBER (IATA): UN# 1993

SECTION 15 Regulatory Information

TSCA: Listed in the TSCA inventory.

SARA (TITLE 313): Title compound not listed.

SECOND INGREDIENT: Isopropanol (Strong acid process): listed, TSCA, SARA.

THIRD INGREDIENT: none

SECTION 16 Other Information

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, Strem Chemicals, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information.

PREPARATION DATE: 02/26/01

REVISION DATE: 09/06/05



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# **30035** 38 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.** 3

I. FACILITY INFORMATION

CHEMICAL LOCATION **Material Storage Area** 4

CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # **1** 6 GRID # **G2-G7** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **AC-131 Part B** WASTE Yes 8 TRADE SECRET Yes No 11

COMMON NAME 9 An EHS Chemical Yes No 12

CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFDP) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18

d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **5** 19 MAXIMUM DAILY AMOUNT **50** 20 ANNUAL WASTE AMOUNT **5** 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **5 Gal Pail** 25

c. POUNDS d. TONS

STORAGE CONTAINER (Check all that apply):

a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26

b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR

c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN

d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|---|----------------------|
| 1 | >65 Zirconium n-PROPOXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 23519-77-9 32 |
| 2 | >25 n-Propanol | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 71-23-8 32 |
| 3 | Balance Trade Secret | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | N.A. 32 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

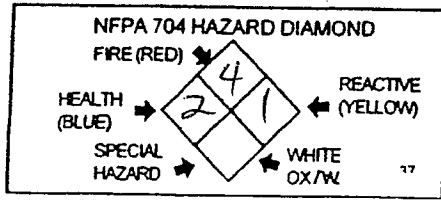
PLACARDING INFORMATION

UNDOT # **UN1993** 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS **3** 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X 36
If EPCRA, Please Sign Here



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Material Safety Data Sheet
AC-® 131 Part B (4-Part Kit)

MSDS No: 21310-02
 Effective: 01/26/09
 Supercedes: 11/18/05
 Page: 1 of 5

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN # 834-100

Product ID: AC-131 Part B
 Generic Description: Zirconium n-Propoxide
 Product Use: Paint Surface Preparation

For customer service/technical information, contact:
 Advanced Chemistry & Technology, Inc.
 7341 Anaconda Ave.
 Garden Grove CA 92841 - 2921
 714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2* |
| Fire | 4 | 4 |
| Reactivity | 1 | 1 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
 Zirconium n-Propoxide
 n-Propanol
 Non - hazardous and other ingredients below reportable levels

| | |
|-------------|---------------------|
| CAS # | Approximate % (w/w) |
| 23519-77-9 | >65 |
| 71-23-8 | >25 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE IMMEDIATE OR DELAYED SEVERE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause immediate or delayed severe eye irritation. Can cause burning sensation, tearing and redness.

SKIN CONTACT: Prolonged or repeated contact may cause irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness. Faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-----------------------|-------|------|-----|------|
| Zirconium n-Propoxide | N | N | N | N |
| n-Propanol | N | N | N | N |



Material Safety Data Sheet

AC-[®] 131 Part B (4-Part Kit)

MSDS No: 21310-02
Effective: 01/26/09
Supercedes: 11/18/05
Page: 2 of 5

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|---------------------------|---------|------|
| Flash Point: | 72°F (22°C) | Method: | |
| Explosive Limits: | (n-propanol) LEL(%) 2.2 | UEL(%) | 13.7 |
| Autoignition: | N/A | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations.



Material Safety Data Sheet
AC-® 131 Part B (4-Part Kit)

MSDS No: 21310-02
Effective: 01/26/09
Supercedes: 11/18/05
Page: 3 of 5

7. HANDLING AND STORAGE

Storage Temperature < 102°F/ 39°C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles face shield, and gloves. Professionally launder contaminated clothing before re - using.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

| | | |
|--------------------------------------|-----------------|-------------------|
| ACGIH - TLV | | |
| Zirconium n-Propoxide (as Zirconium) | 5 | mg/m ³ |
| n-Propanol | 200 | ppm. |
| ACGIH - STEL | | |
| Zirconium n-Propoxide (as Zirconium) | 5 | mg/m ³ |
| n-Propanol | 250 | ppm |
| OSHA - PEL | | |
| Zirconium n-Propoxide | Not Established | |
| n-Propanol | 200 | ppm. |
| OSHA - STEL | | |
| Zirconium n-Propoxide | Not Established | |
| n-Propanol | 250 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------|--------------------|------------------|-------------------|
| Appearance | Light amber liquid | Odor | Characteristic |
| Physical State | Liquid | Solubility | Reacts with water |
| pH | N/A | VOC Material | 318 |
| Specific Gravity | 1.05 | % Non - Vol(w/w) | 30 |
| Vapor Density | 2.1 (n-Propanol) | | |



Material Safety Data Sheet

AC-[®] 131 Part B (4-Part Kit)

MSDS No: 21310-02
Effective: 01/26/09
Supercedes: 11/18/05
Page: 4 of 5

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

| | | |
|-----------------------|----------------|------------|
| Zirconium n-Propoxide | Not Applicable | |
| n-Propanol | | |
| LDLo | Oral wmn | 5700 mg/kg |
| LD50 | Oral Rat | 1870 mg/kg |

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------|--|-----------------|--------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Flammable Liquid, N.O.S. (Contains n-Propanol) | Y | Y | Y |
| DOT Label | Flammable Liquid | UN/NA Id Number | UN1993 | |
| Hazard Class | 3 | Packing Group | II | |

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire
- N - Pressure
- N - Reactivity
- Y - Acute
- Y - Chronic



Material Safety Data Sheet AC-® 131 Part B (4-Part Kit)

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Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals - None

TSCA Section 12(b) Export Notification - None

TSCA Section 8(d) Data Reporting Rule - None

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical
Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

COMMON NAME

Zirconium n-Propanol

n-Propanol

Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 23519-77-9 | >65 |
| 71-23-8 | >25 |
| Proprietary | Balance |

California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 2 Class D Division 2 Sub - division B

CEPA - NPRI

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-----------|----|---------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|--------|-------|---|
| CHEMICAL LOCATION | Material Storage Area | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 |
| | 6 | GRID # | G2-G7 | |

II. CHEMICAL INFORMATION

| | | | | | | | |
|--|---|--|--|---|--|---|------------|
| CHEMICAL NAME | AL-130 Part B | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 11 |
| COMMON NAME | SAME | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 10 | * If EPCRA see instructions * If EHS is "Yes", all amounts must be LBS | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIUS | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | |
| AVERAGE DAILY AMOUNT | 5 | 19 | MAXIMUM DAILY AMOUNT | 50 | 20 | ANNUAL WASTE AMOUNT | NONE |
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 5 Gal Pail |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 25 | |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 | | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----------|---|--|------------|
| 1 73-77 | ZIRCONIUM n-PROPOXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 23519-77-9 |
| 2 23-27 | n-PROPANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 71-23-8 |
| 3 balance | TRADE SECRET | <input type="checkbox"/> Yes <input type="checkbox"/> No | N.A. |
| 4 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

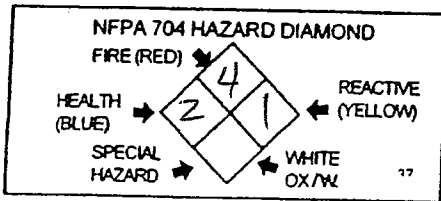
PLACARDING INFORMATION

UNDOT # UN 1993 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 130 Part B

MSDS No: 21300-03
Effective: 01/26/09
Supercedes: 06/14/07
Page: 1 of 5

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN # 834-100

Product ID: AC-130 Part B

Generic Description: Zirconium n-Propoxide

Product Use: Adhesion Promoter

For customer service/technical information, contact:
Advanced Chemistry & Technology, Inc.
7341 Anaconda Ave.
Garden Grove CA 92841 - 2921
714 - 373 - 2837

ChemTrec Emergency

1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2* |
| Fire | 4 | 4 |
| Reactivity | 1 | 1 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
Zirconium n-Propoxide
n-Propanol

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 23519-77-9 | 73 - 77 |
| 71-23-8 | 23 - 27 |
| Proprietary | Balance |

Non - hazardous and other ingredients below reportable levels

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE IMMEDIATE OR DELAYED SEVERE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause immediate or delayed severe eye irritation. Can cause burning sensation, tearing and redness.

SKIN CONTACT: Prolonged or repeated contact may cause irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

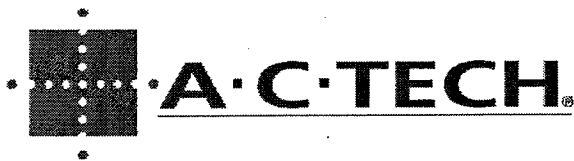
INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness. Faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-----------------------|-------|------|-----|------|
| Zirconium n-Propoxide | N | N | N | N |
| n-Propanol | N | N | N | N |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|---------------------------|---------|------|
| Flash Point: | 72°F (22°C) | Method: | |
| Explosive Limits: | (n-propanol) LEL(%) 2.2 | UEL(%) | 13.7 |
| Autoignition: | N/A | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations.



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7. HANDLING AND STORAGE

Storage Temperature < 102°F/ 39°C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles face shield, and gloves. Professionally launder contaminated clothing before re - using.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

| | | |
|--------------------------------------|-----------------|-------------------|
| ACGIH - TLV | | |
| Zirconium n-Propoxide (as Zirconium) | 5 | mg/m ³ |
| n-Propanol | 200 | ppm. |
| ACGIH - STEL | | |
| Zirconium n-Propoxide (as Zirconium) | 5 | mg/m ³ |
| n-Propanol | 250 | ppm |
| OSHA - PEL | | |
| Zirconium n-Propoxide | Not Established | |
| n-Propanol | 200 | ppm. |
| OSHA - STEL | | |
| Zirconium n-Propoxide | Not Established | |
| n-Propanol | 250 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------------|--------------------|-------------------|-------------------|
| Appearance | Light amber liquid | Odor | Characteristic |
| Physical State | Liquid | Solubility | Reacts with water |
| pH | N/A | VOC Material, g/l | 318 |
| Specific Gravity, g/cc | 1.05 | % Non - Vol(w/w) | 30 |
| Vapor Density | 2.1 (n-Propanol) | | |



**Material Safety Data Sheet
AC-® 130 Part B**

**MSDS No: 21300-03
Effective: 01/26/09
Supercedes: 06/14/07
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NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: High temperatures.
INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

| | | |
|-----------------------|----------------|------------|
| Zirconium n-Propoxide | Not Applicable | |
| n-Propanol | | |
| LDLo | Oral wmn | 5700 mg/kg |
| LD50 | Oral Rat | 1870 mg/kg |

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.
GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.
GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.
SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------|--|-----------------|--------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Flammable Liquid, N.O.S. (Contains n-Propanol) | Y | Y | Y |
| DOT Label | Flammable Liquid | UN/NA Id Number | UN1993 | |
| Hazard Class | 3 | Packing Group | II | |

15. REGULATORY INFORMATION

FEDERAL:
This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).
SARA Title III - Section 311/312 - Hazard Categories:
Y - Fire
N - Pressure
N - Reactivity
Y - Acute
Y - Chronic

Ozone - Depleting Chemicals - No regulated ingredients.
SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.



Material Safety Data Sheet AC-[®] 130 Part B

MSDS No: 21300-03
Effective: 01/26/09
Supercedes: 06/14/07
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SARA Section 313 Toxic Chemicals - None

TSCA Section 12(b) Export Notification - None

TSCA Section 8(d) Data Reporting Rule - None

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical
Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

COMMON NAME

Zirconium n-Propanol

n-Propanol

Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 23519-77-9 | 73 - 77 |
| 71-23-8 | 23 - 27 |
| Proprietary | Balance |

California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 2 Class D Division 2 Sub - division B

CEPA - NPRI

EUROPEAN COMMUNITY:

Particular hazards associated with the preparation and safety recommendations:

- R11 Highly flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R36/37 Irritating to eyes and respiratory system.
- S20/21 When using do not eat, drink or smoke.
- S37/39 Wear suitable gloves and eye/face protection.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

CHEMICAL LOCATION Raw Material Storage

CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # 1 6 GRID # J5 7

II. CHEMICAL INFORMATION

CHEMICAL NAME FORMULA AL 190 PROOF WASTE Yes No 8 TRADE SECRET Yes No 11

COMMON NAME DENATURED ALCOHOL 9 An EHS Chemical Yes No 12

CAS # _____ 10 FIRE CODE HAZARD CLASSES (supplied by GGFD) _____ 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES _____ 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE d. ACUTE HEALTH e. CHRONIC HEALTH 18

AVERAGE DAILY AMOUNT 80 19 MAXIMUM DAILY AMOUNT 200 20 ANNUAL WASTE AMOUNT NONE 21 STATE WASTE CODE _____ 22

UNITS a. GALLONS b. CUBIC FEET c. POUNDS d. TONS 23 DAYS ON SITE 365 DAYS 24 LARGEST CONTAINER 5 GAL PAIL 25

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK b. UNDERGROUND TANK c. TANK INSIDE BLDG d. STEEL DRUM e. PLASTIC DRUM f. NONMETALLIC DRUM g. METAL CONTAINER h. CARBOY i. VAT j. FIBER DRUM k. BAG(S) l. BOX(S) m. CYLINDER n. GLASS CONTAINER o. PLASTIC CONTAINER p. IN MACH OR EQUIP q. TANK WAGON r. RAIL CAR s. TOTE BIN t. OTHER _____ 26

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|------|---|--|----------|
| 85.8 | Ethanol | <input type="checkbox"/> Yes <input type="checkbox"/> No | 64-17-5 |
| 4.3 | Methanol | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-56-1 |
| 0.9 | Methyl Isobutyl Ketone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-10-1 |
| 9.0 | ISOPROPYL ALCOHOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-63-0 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

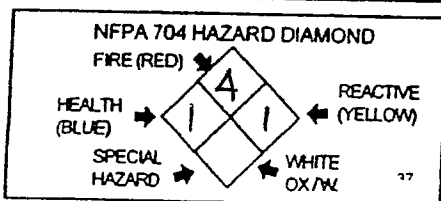
PLACARDING INFORMATION

UNDOT # UN 1987 33 Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34 Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36 If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

SECTION I

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Formula A1, 190 Proof
This MSDS is valid for all grades and catalog #'s

Synonyms: Denatured Alcohol; Denatured Ethanol; Govt. Formula A1

Formula: Mixture

Manufacturer: Pharmco Products Inc.
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

Emergency Contact:
CHEMTREC 1-800-424-9300

SECTION II

COMPOSITION / INFORMATION ON INGREDIENTS

| % vol. | Material | CAS | Exposure Limits |
|--------|------------------------|----------|---|
| 85.8% | Ethanol (190 Proof) | 64-17-5 | 1000ppm TWA |
| 4.29% | Methanol | 67-56-1 | 200ppm TWA, OSHA/ACGIH; 250ppm STEL OSHA/ACGIH |
| 0.905 | Methyl Isobutyl Ketone | 108-10-1 | 50ppm TWA; OSHA and ACGIH; 75ppm STEL. OSHA & ACGIH |
| 9.0% | Isopropyl Alcohol | 67-63-0 | 400ppm TWA; 500 ppm STEL |

SECTION III

HAZARDS IDENTIFICATION

Carcinogen Status: Established uses of denatured ethanol are not considered to pose a significant cancer hazard.

Poisonous: This product contains methanol. It can not be made non-poisonous. Ingestion of 60-200ml of methanol is a fatal dose for most adults. Ingestion of 10ml may cause blindness.

Routes of Exposure:

Swallowing: May cause dizziness, faintness, drowsiness decreased awareness or responsiveness, nausea, vomiting, staggering gait, lack of coordination, blindness, coma and death.

Skin Absorption: Prolonged or widespread contact may result in the absorption of potentially harmful amounts.

Inhalation: High vapor concentration may cause burning sensation in nose and throat and stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur.

Skin Contact: Prolonged or repeated contact may cause defatting and drying of the skin.

Eye Contact: May cause irritation including stinging, tearing, and redness

Effects of Repeated Overexposure: Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with

fibrosis. Overexposure to methanol may cause eye damage and liver or kidney injury.

Other Health Hazards: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome.

Medical Conditions Aggravated by Overexposure:

Repeated exposure to ethanol may aggravate liver injury produced from other causes. Skin contact may aggravate dermatitis.

SECTION IV FIRST AID

Obtain medical attention for all cases of over-exposure.

Swallowing: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention. If medical advice is delayed and the person has swallowed a few ounces, give 3-4 ounces of hard liquor such as whiskey.

Skin: Wash skin with soap and water for at least 15 minutes

Inhalation: Remove to fresh air; Give artificial respiration if not breathing;

If breathing is difficult oxygen may be given by qualified personnel;

Obtain medical assistance if discomfort persists.

Eye Contact: Flush eyes with water for at least 15 minutes. Obtain medical assistance.

Note to Physician: Symptoms vary with alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.5-1.5%.

Approximately 25% of individuals show signs of intoxication at these levels. Above .15% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Severe poisoning occurs when the blood is ethanol level is 0.3-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids.

SECTION V FIRE FIGHTING MEASURES

Fire/Explosive Properties for 200 Proof Ethanol

Flash Point: 58F (14C) Tag Closed Cup
70F (21C) Tag Open Cup

Flammable Limits in Air (% by volume):

3.3%(ethanol) - 19.0 (ethanol)

Flammability Classification: 3 (NFPA)

1993 Emergency Response Guidebook: Guide 26

1996 North American Emergency Response Guidebook: Guide 127

Extinguishing Media: Apply alcohol-type or all-purpose foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

Special Fire Fighting Procedures: Use water spray to cool fire-exposed containers and structures; Use water spray to disperse vapors - re-ignition is possible; Use self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards:

- Vapors may travel to source of ignition and flash back.
- Vapors may settle in low or confined spaces.
- May produce a floating fire hazard.
- Static ignition hazard can result from handling and use.

SECTION VI

SPILL/ACCIDENTAL RELEASE MEASURES

Small spills can be flushed with large amounts of water.
Large spills: Eliminate all ignition sources; ground all equipment; do not walk through spill; stop spill if possible; prevent entry into sewers, confined spaces, etc.; use a vapor suppressing foam to reduce vapors; absorb spill with non-combustible matter and transfer to containers; use non-sparking tools to collect absorbed material.
Refer to section 11 for disposal information.

SECTION VII HANDLING AND STORAGE

- Flammable material - keep away from heat, sparks, and flame; sudden releases of hot organic vapors or mists from process equipment operating at elevated temperature may result in ignitions without the presence of obvious ignition sources.
- Avoid contact with eyes.
- Keep container closed.
- Use with adequate ventilation.
- Ground container when transferring product.
- Vapors may collect in containers; treat empty containers as hazardous.
- Wash thoroughly after handling
- Vapors may settle in low or confined areas
- Danger - may cause blindness or death if swallowed

SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Special, local ventilation is needed where vapors escape to the workplace air
Respiratory Protection: Use self-contained breathing apparatus in high vapor concentration
Personal Protective Equipment: gloves, lab coat or uniform, safety glasses, eye wash, safety shower

SECTION IX

PHYSICAL AND CHEMICAL PROPERTIES

(For 200 Proof Ethanol)

Appearance: clear, colorless liquid
Odor: characteristic
Vapor pressure @ 20C: 44.6 mmHg
Vapor density: 1.6 (air =1)
Boiling point @ 760mm Hg: 78.3C (172.9F)
Freezing Point: <-90C
Solubility in Water: 100% @ 20C
Specific Gravity : . @ 20C .7906
Density @ (60F) 6.61 lbs/gal
Evaporation Rate: (butyl acetate = 1) 3.3
Percent Volatiles: 100%

SECTION X

STABILITY/REACTIVITY INFORMATION

Stability: Stable Conditions to avoid: None known
Incompatibility/Materials to avoid: strong oxidizing agents; strong inorganic acids
Hazardous Combustion/Decomposition Products:
Carbon monoxide and/or carbon dioxide
Hazardous Polymerization: Will not occur

SECTION XI

DISPOSAL CONSIDERATIONS

Vapors may collect in empty containers. Treat empty containers as hazardous.
Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations.

SECTION XII TRANSPORTATION INFORMATION

Proper Shipping Name: Alcohol, nos
Hazard Class: 3
UN Number: 1987
IMO Information: Alcohols, NOS
Label of Class: 3
Packing Group II
Intermediate flashpoint group

SECTION XIII REGULATORY INFORMATION

Federal EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in CFR. Components present in this product at a level which could require reporting under this statute are:

| Chemical | CAS Number | Upper Bound Conc. % |
|------------------------|------------|---------------------|
| Acetone | 67-64-1 | .0002 |
| Methyl Isobutyl Ketone | 108-10-1 | 0.9 |
| Methanol | 67-56-1 | 4.29 |
| Acetaldehyde | 75-07-0 | .0010 |

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, and 312). Components present in this product at a level which could require reporting under this statute are: none.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are:

Methanol (67-56-1) upper bound concentration 4.29%

Toxic Substances Control Act (TSCA) Status:

The ingredients of this product are on the TSCA inventory.

State Right to Know

California Proposition 65: This product contains trace levels of acetaldehyde known to the State of California to cause cancer.
Massachusetts: Hazardous substances and extraordinarily hazardous substances must be identified. Components present which could require reporting:

Extraordinarily Hazardous (=> 0.0001%): Acetaldehyde (CAS 75-07-0) upper bound conc. .0010%

Hazardous (=>1%): Ethanol (CAS 64-17-5) upper bound conc. 85.8%
Methanol (CAS 67-56-1) upper bound conc. 4.29%
Isopropanol (CAS 67-63-0) upper bound conc. 9.0%

Pennsylvania: Hazardous substances must be identified.

Hazardous (=>1%): Ethanol (CAS 64-17-5) upper bound conc. 85.8%
Methanol (CAS 67-56-1) upper bound conc. 4.29%
Isopropanol (CAS 67-63-0) upper bound conc. 9.0%

California SCAQMD Rule 443.1 (VOC's)

A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides, or carbonates, ammonium carbonate, 1,1,1 tri-chloroethane, methylene chloride, (FC-23), (CFC-113), (CFC-12), (CFC-11), (CFC-22), (CFC-114) and (CFC-115).

VOC 790g/l: vapor pressure 43.6 mm Hg @ 20C for pure 200 proof ethanol

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-----------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-----------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | |
|-----------------------------|---|---|--------|----|---|
| CHEMICAL LOCATION | Raw Material Storage | | | | 4 |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 |
| | | | GRID # | J5 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|-----------------|---|---|---|--------------|---|--|----|
| CHEMICAL NAME | REAGENT ALCOHOL | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | |
| COMMON NAME | SAME | | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | | | | | 13 |

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|----|----|----------------------|----|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 10 | 19 | MAXIMUM DAILY AMOUNT | 40 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|----|----|----------------------|----|----|---------------------|------|----|------------------|----|

| | | | | | | | | | |
|-------|---|--|----|--------------|----------|----|-------------------|-----------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 1 GAL CAN | 25 |
| | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | | | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|---------|
| 90 | ETHANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 64-17-5 |
| 5 | METHANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-56-1 |
| 5 | ISOPROPYL ALCOHOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-63-0 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

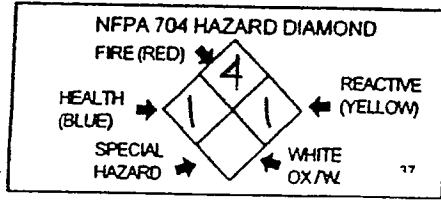
PLACARDING INFORMATION

UNDOT # UN 1987 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

Material Safety Data Sheet

Reagent Alcohol

ACC# 20087

Section 1 - Chemical Product and Company Identification

MSDS Name: Reagent Alcohol

Catalog Numbers: AC611080040, S79885, 61105-0040, A962-200, A962-4, A962F-1GAL, A962F-1GALLC, A962P-1GAL, A962P-4, A962RB-200, A962S-4, A96RB-200, A995-1, A995-4, A995POP19, A995POP200, A995POP50, A995RS-19, A995RS-200, A995RS-50, A995SS-115, A995SS-19, A995SS-200, A995SS-28, A995SS-50, HC6001GAL, NC9246702

Synonyms: Ethanol, Dehydrated Alcohol; Ethyl Hydrate; Specially Denatured Alcohol.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

| CAS# | Chemical Name | Percent | EINECS/ELINCS |
|---------|-------------------|---------|---------------|
| 64-17-5 | Ethyl alcohol | 90.0 | 200-578-6 |
| 67-56-1 | Methyl alcohol | 5.0 | 200-659-6 |
| 67-63-0 | Isopropyl alcohol | 5.0 | 200-661-7 |

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid.

Danger! Poison! Causes severe eye irritation. Causes respiratory tract irritation. **Flammable liquid and vapor.** May be fatal or cause blindness if swallowed. Vapor harmful. This substance has caused adverse reproductive and fetal effects in humans. May be absorbed through intact skin. May form explosive peroxides. May cause central nervous system depression. May cause liver, kidney and heart damage. Cannot be made non-poisonous. Causes moderate skin irritation.

Target Organs: Kidneys, central nervous system, liver, eyes.

Potential Health Effects

Eye: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical

conjunctivitis and corneal damage.

Skin: Causes moderate skin irritation. May be absorbed through the skin. May cause cyanosis of the extremities.

Ingestion: May be fatal or cause blindness if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: Causes respiratory tract irritation. May cause visual impairment and possible permanent blindness. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Effects may be delayed. Ethanol may inhibit methanol metabolism. Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance.

Antidote: Ethanol may inhibit methanol metabolism.

Section 5 - Fire Fighting Measures

General Information: Ethanol may inhibit methanol metabolism. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Will be easily ignited by heat, sparks or flame.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 12.8-14.4 deg C

Autoignition Temperature: 362.8 deg C (685.04 deg F)

Explosion Limits, Lower: 3.3 vol %

Upper: 19 vol %

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use only under a chemical fume hood.

Exposure Limits

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|----------------|---|--|--|
| Ethyl alcohol | 1000 ppm TWA | 1000 ppm TWA; 1900 mg/m ³ TWA 3300 ppm IDLH | 1000 ppm TWA; 1900 mg/m ³ TWA |
| Methyl alcohol | 200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route | 200 ppm TWA; 260 mg/m ³ TWA 6000 ppm IDLH | 200 ppm TWA; 260 mg/m ³ TWA |

| | | | |
|-------------------|---------------------------|--|--|
| Isopropyl alcohol | 200 ppm TWA; 400 ppm STEL | 400 ppm TWA; 980 mg/m ³ TWA 2000 ppm IDLH | 400 ppm TWA; 980 mg/m ³ TWA |
|-------------------|---------------------------|--|--|

OSHA Vacated PELs: Ethyl alcohol: 1000 ppm TWA; 1900 mg/m³ TWA Methyl alcohol: 200 ppm TWA; 260 mg/m³ TWA Isopropyl alcohol: 400 ppm TWA; 980 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: aromatic odor

pH: No data

Vapor Pressure: 44 mm Hg

Vapor Density: 1.24 kg/m³

Evaporation Rate: No data

Viscosity: 1.2 cp

Boiling Point: 78.5 deg C

Freezing/Melting Point: -114.1 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 0.8

Molecular Formula: Solution

Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stability unknown. This material may be sensitive to peroxide formation.

Conditions to Avoid: Ignition sources, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, acid chlorides, active metals, alkali metals, aluminum, ammonia, halogens, hydrazine, nitric acid, peroxides, isocyanates, aliphatic amines, sodium, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), acid anhydrides, calcium hypochlorite, cyanuric chloride, chromyl chloride, nitrosyl perchlorate, diethyl zinc, bromine pentafluoride, perchloric acid, silver nitrate, chromic anhydride, mercuric nitrate, phosphorus trioxide, potassium tert-butoxide, magnesium perchlorate, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, Oxidants (such as barium perchlorate, bromine, chlorine, hydrogen peroxide, lead perchlorate, perchloric acid, sodium hypochlorite), acetyl bromide, alkyl aluminum salts, beryllium dihydride, Attacks some forms of plastics, rubbers, and coatings., acetyl chloride, disulfur dichloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 64-17-5: KQ6300000

CAS# 67-56-1: PC1400000

CAS# 67-63-0: NT8050000

LD50/LC50:

CAS# 64-17-5:

- Draize test, rabbit, eye: 500 mg Severe;
- Draize test, rabbit, eye: 500 mg/24H Mild;
- Draize test, rabbit, skin: 20 mg/24H Moderate;
- Inhalation, mouse: LC50 = 39 gm/m³/4H;
- Inhalation, rat: LC50 = 20000 ppm/10H;
- Oral, mouse: LD50 = 3450 mg/kg;
- Oral, rabbit: LD50 = 6300 mg/kg;
- Oral, rat: LD50 = 7060 mg/kg;
- Oral, rat: LD50 = 9000 mg/kg;

CAS# 67-56-1:

- Draize test, rabbit, eye: 40 mg Moderate;
- Draize test, rabbit, eye: 100 mg/24H Moderate;
- Draize test, rabbit, skin: 20 mg/24H Moderate;
- Inhalation, rabbit: LC50 = 81000 mg/m³/14H;
- Inhalation, rat: LC50 = 64000 ppm/4H;
- Oral, mouse: LD50 = 7300 mg/kg;
- Oral, rabbit: LD50 = 14200 mg/kg;
- Oral, rat: LD50 = 5600 mg/kg;
- Skin, rabbit: LD50 = 15800 mg/kg;

CAS# 67-63-0:

- Draize test, rabbit, eye: 100 mg Severe;
- Draize test, rabbit, eye: 10 mg Moderate;
- Draize test, rabbit, eye: 100 mg/24H Moderate;
- Draize test, rabbit, skin: 500 mg Mild;
- Inhalation, mouse: LC50 = 53000 mg/m³;
- Inhalation, rat: LC50 = 16000 ppm/8H;
- Inhalation, rat: LC50 = 72600 mg/m³;
- Oral, mouse: LD50 = 3600 mg/kg;
- Oral, mouse: LD50 = 3600 mg/kg;
- Oral, rabbit: LD50 = 6410 mg/kg;
- Oral, rat: LD50 = 5045 mg/kg;
- Oral, rat: LD50 = 5000 mg/kg;
- Skin, rabbit: LD50 = 12800

Carcinogenicity:

CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 67-63-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Methanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Specific developmental abnormalities include cardiovascular, musculoskeletal, and urogenital systems. Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome". Methanol and phenol have been shown to produce fetotoxicity in the embryo or fetus in laboratory animals. Specific developmental abnormalities for methanol include the musculoskeletal, urogenital, and cardiovascular systems.

Teratogenicity: CAS# 64-17-5: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects: CAS# 64-17-5: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

Mutagenicity: CAS# 64-17-5: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C
CFish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified)
Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test
CAS# 64-17-5: When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Environmental: CAS# 64-17-5: When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

| | US DOT | Canada TDG |
|-----------------------|------------------|---|
| Shipping Name: | ALCOHOLS, N.O.S. | ALCOHOLS, N.O.S. (Ethanol, Methanol, Isopropanol) |
| Hazard Class: | 3 | 3 |
| UN Number: | UN1987 | UN1987 |
| Packing Group: | II | II |

Section 15 - Regulatory Information

US FEDERAL

TSCA

- CAS# 64-17-5 is listed on the TSCA inventory.
- CAS# 67-56-1 is listed on the TSCA inventory.
- CAS# 67-63-0 is listed on the TSCA inventory.

Health & Safety Reporting List

- CAS# 67-63-0: Effective 12/15/86, Sunset 12/15/96

Chemical Test Rules

- CAS# 67-63-0: 40 CFR 799.2325

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

- CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

- CAS # 64-17-5: immediate, delayed, fire.
- CAS # 67-56-1: immediate, fire.
- CAS # 67-63-0: immediate, delayed, fire.

Section 313

This material contains Methyl alcohol (CAS# 67-56-1, 5.0%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Isopropyl alcohol (CAS# 67-63-0, 5.0%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

- CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 67-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause developmental reproductive toxicity.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN F

Risk Phrases:

R 11 Highly flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 68/20/21/22 Harmful : possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 24/25 Avoid contact with skin and eyes.

S 36/37 Wear suitable protective clothing and gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 7 Keep container tightly closed.

WGK (Water Danger/Protection)

CAS# 64-17-5: 0

CAS# 67-56-1: 1

CAS# 67-63-0: 1

Canada - DSL/NDSL

CAS# 64-17-5 is listed on Canada's DSL List.

CAS# 67-56-1 is listed on Canada's DSL List.

CAS# 67-63-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.

CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.

CAS# 67-63-0 is listed on the Canadian Ingredient Disclosure List.

| |
|-------------------------------------|
| Section 16 - Additional Information |
|-------------------------------------|

MSDS Creation Date: 6/19/1998

Revision #9 Date: 10/29/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 |
| | 6 | GRID # | G2 → G7 | |

II. CHEMICAL INFORMATION

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|---|--|---|---|--|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | | | | | | | | | | | | | |
| COMMON NAME | AC-236 Class A Base | | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 | | | | | | | | | | | | | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | | | | | | | | | | | | | | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 | | | | | | | | | | | | |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | | | | | | | | | | | |
| | | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | | | | | | | | | | | | | |
| AVERAGE DAILY AMOUNT | 200 | 19 | MAXIMUM DAILY AMOUNT | 10,000 | 20 | ANNUAL WASTE AMOUNT | 100 | 21 | STATE WASTE CODE | 22 | | | | | | | | | | | |
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 25 | | | | | | | | | | | |
| | *If EHS, amount must be in pounds. | | | | | | | 50 Gallon Drum | | | | | | | | | | | | | |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP. | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | | | | | | | | | | | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 | | | | | | | | | | | | | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------------------|---|--|-------|
| 20-25 ²⁹ | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 10-20 ²⁹ | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 10-15 ²⁹ | Limestone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 1-5 ²⁹ | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

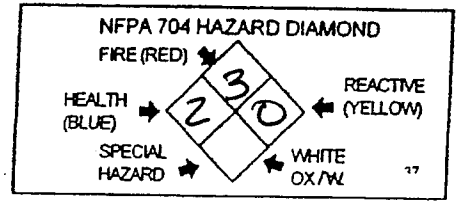
PLACARDING INFORMATION

UNDOT # UN 1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (ATA/PGFR) 3.3 IMD
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 236 Class A Base

MSDS No: 32361-07
Effective: 01/21/09
Supercedes: 08/31/07
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-236 Class A Base
Generic Description: Polysulfide sealant
Product Use: Integral fuel tank sealant

SIN #834-100

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

ChemTrec Emergency
1 - 800 - 424 - 9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMMON NAME | CAS # | Approximate % (w/w) |
|---|----------------|---------------------|
| Calcium carbonate | 471 - 34 - 1 | 20 - 25 |
| Toluene | 108 - 88 - 3 | 10 - 20 |
| Limestone | 1317 - 65 - 3 | 10 - 15 |
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Non - hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. MAY CAUSE MECHANICAL EYE IRRITATION. DO NOT SWALLOW. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis). May be absorbed through the skin.

INHALATION (Breathing): Irritation to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and incoordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): Irritation to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and incoordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Limestone | No | No | No | No |
| Toluene | No | No | No | No |
| Calcium Carbonate | No | No | No | No |
| Titanium Dioxide | No | No | No | No |



Material Safety Data Sheet AC-[®] 236 Class A Base

MSDS No: 32361-07
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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|---|---------|----------------------|
| Flash Point: | 41°F (5°C) | Method: | Setaflash Closed Cup |
| Explosive Limits: | LEL (%) Not Determined UEL (%) Not Determined | | |
| Autoignition: | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide. Low molecular weight hydrocarbons.

FIRE AND EXPLOSION HAZARDS: During a fire, irritating and highly toxic gases may be generated during combustion or decomposition. High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (fume, electric motor, hot surface, cigarette, etc.) and flash back.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



Material Safety Data Sheet AC-[®] 236 Class A Base

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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be elevated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: **Attention!** This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not re-use empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|----|------------------------------|
| Limestone | 10 | mg/M ³ Total dust |
| Toluene | 50 | Ppm – skin |
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - PEL

| | | |
|-------------------|-----|------------------------------|
| Limestone | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLV's or PEL's).

EYE PROTECTION: Wear chemical splash goggles or safety glasses with side shields. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------------|----------------|---------------------|----------------------|
| Appearance.....: | Off-white | Odor.....: | Sulfide |
| Physical State.....: | Paste/liquid | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | VOC Material.....: | 191 g/L 1.6 lbs./gal |
| Specific Gravity....: | 1.47 | % Non – Vol. (w/w): | 87 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet

AC-[®] 236 Class A Base

MSDS No: 32361-07
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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Strong bases. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Toluene:

| | | |
|-----------------|--------|-------------------|
| Oral LD50 | Rat | 5,000 mg/kg |
| Dermal LD50 | Rabbit | 12,124 mg/kg |
| Inhalation LC50 | Mouse | 5,320 ppm/8-hours |

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors were observed at 250-mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------|---------------|--------|------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
|--------------|---------------|--------|------|-----|



Material Safety Data Sheet

AC-[®] 236 Class A Base

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Resin solution

Y Y Y

DOT Label: Flammable Liquid
Hazard Class: 3 (IATA/49CFR) 3.3 (IMO)
Packaging Group: II

UN/NA Id Num: UN 1866
USPS Mailability No

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat

SARA Section 313 Toxic Chemicals
Toluene

TSCA Section 8(d) Data Reporting Rule
Toluene

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

| | | |
|--|-------------|---------|
| Limestone | 1317-65-3 | 10 - 15 |
| Toluene | 108-88-3 | 10 - 20 |
| Environmental Hazard. | | |
| Calcium carbonate | 471-34-1 | 20 - 25 |
| Titanium Dioxide | 13463-67-7 | 1 - 5 |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65 -

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|-----------------------------|------------|---------|
| Toluene | 108-88-3 | 10 - 20 |
| Reproductive Hazard. | | |
| Quartz (crystalline silica) | 14808-60-7 | < 0.1 |
| Cancer Hazard. | | |
| Formaldehyde | 50-00-0 | < 0.01* |
| Cancer Hazard. | | |

*Trace = present at less than 0.01 percent.



Material Safety Data Sheet

AC-[®] 236 Class A Base

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CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials information System (WHMIS).

Class B Division 2

Class D Division 2 Sub-division A
Class D Division 2 Sub-division B

CEPA - NPRI -

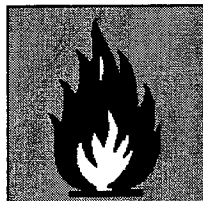
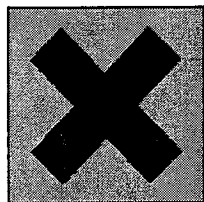
Toluene.

EUROPEAN COMMUNITY:

Preparation classification:

Harmful.

Highly flammable.



Contains:

601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 11 Highly flammable.
- R 63 Possible risk of harm to the unborn child.
- S 36/37 Wear suitable protective clothing and gloves.
- S 16 Keep away from sources of ignition - no smoking.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
- S 9 Keep container in a well-ventilated place.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-----------|----|---------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|-------|-------|---|
| CHEMICAL LOCATION | Material Storage Area | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 |
| 6 | GRID # | G2-G7 | | |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------------------|--|---|---|-----------------|---|----|
| CHEMICAL NAME | AC-215 class A BASE | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 11 |
| COMMON NAME | SAME | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFDF) | 13 | | | | |

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | | |
|--------------------------------------|---|----|-----------------------|---|----|---|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH |
|--------------------------------------|---|----|-----------------------|---|----|---|

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|-----|----|---------------------|---|----|------------------|----|
| AVERAGE DAILY AMOUNT | 0.2 | 19 | MAXIMUM DAILY AMOUNT | 150 | 20 | ANNUAL WASTE AMOUNT | 5 | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|-----|----|---------------------|---|----|------------------|----|

| | | | | | | | | |
|-------|---|----|--------------|----------|----|-------------------|-------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gal Drum | 25 |
|-------|---|----|--------------|----------|----|-------------------|-------------|----|

| | | | | | | |
|--|---|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input checked="" type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|--|--|---|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----------|---|--|------------|
| 1 20-25 | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 2 5-10 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 3 1-5 | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-7 |
| 4 1-5 | Terphenyl, hydrogenated | <input type="checkbox"/> Yes <input type="checkbox"/> No | 61788-32-7 |
| 5 balance | Trade Secret | <input type="checkbox"/> Yes <input type="checkbox"/> No | N.A. |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

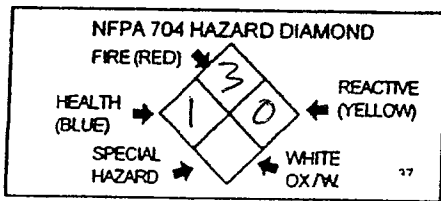
PLACARDING INFORMATION

UNDOT # UN1866 33
Refer to shipping papers or MSDS

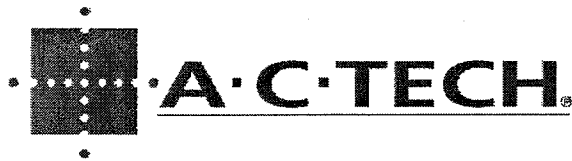
DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 215 Class A Base

MSDS No: 32151-04
Effective: 01/26/09
Supercedes: 05/09/08
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-215 Class A Base
Generic Description: Polysulfide sealant
Product Use: Access door sealant

For information, contact:
Advanced Chemistry & Technology
Preparer: David Jordan, Director of R&D
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 1* | 1 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMMON NAME | CAS # | Approximate % (w/w) |
|---|----------------|---------------------|
| Calcium carbonate | 471-34-1 | 20 - 25 |
| Toluene | 108-88-3 | 5 - 10 |
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Terphenyl, hydrogenated | 61788 - 32 - 7 | 1 - 5 |
| Non - hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. MAY CAUSE EYE IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION. PROLONGED EXPOSURE MAY CAUSE EYE, NOSE AND RESPIRATORY TRACT IRRITATION. DO NOT SWALLOW.
See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation.

SKIN CONTACT: Prolonged or repeated contact may cause irritation.

INHALATION (Breathing): Can be irritation to eyes, nose, and respiratory tract following prolonged exposure. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Exposure is unlikely. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea).

TARGET ORGANS / CHRONIC EFFECTS: Lungs and respiratory system.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system.

| CARCINOGENICITY: | ACGIH | IARC | NTP | OSHA |
|-------------------------|-------|------|-----|------|
| Calcium carbonate | No | No | No | No |
| Toluene | No | No | No | No |
| Titanium Dioxide | No | No | No | No |
| Terphenyl, hydrogenated | No | No | No | No |



Material Safety Data Sheet AC-[®] 215 Class A Base

MSDS No: 32151-04
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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point: 40°F (4°C)
Explosive Limits: LEL(%) Not Determined
Autoignition: Not Determined

Method: Setflash Closed Cup
UEL(%) Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



Material Safety Data Sheet

AC-[®] 215 Class A Base

MSDS No: 32151-04
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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store below 100°F. Store in cool, dry, well ventilated area.

TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re - use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------------|-----|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Titanium Dioxide | 10 | mg/M ³ |
| Toluene | 50 | ppm. |
| Terphenyl, hydrogenated | 0.5 | ppm - Ceiling |

OSHA - PEL

| | | |
|-------------------------|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Titanium Dioxide | 10 | mg/M ³ |
| Toluene | 100 | ppm |
| Terphenyl, hydrogenated | 0.5 | ppm |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles or safety glasses with side shields. An eye wash facility should be readily available.

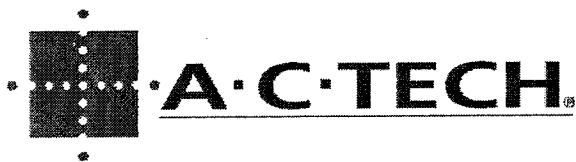
SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9 PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------|------------------------|-------------------|----------------|
| Appearance: | Red | Odor: | Sulfide |
| Physical State: | Paste | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Applicable |
| Vapor Density: | Not Applicable | Evaporation Rate: | Not Applicable |
| VOC Material: | 80 g/l (0.67 lbs./gal) | Specific Gravity: | 1.47 |
| %Non - Vol.(w/w),.....: | 94 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-[®] 215 Class A Base

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Effective: 01/26/09
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Page: 4 of 6

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Not applicable.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Titanium Dioxide:

In a 2 - year study in rats, an increase in benign and malignant lung tumors was observed at 250-mg/M3 respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

Hydrogenated Terphenyl:

Terphenyl, hydrogenated:

| | | | |
|-------------|--------|---------|-------|
| Oral LD50 | Rat | 17,500 | mg/kg |
| | Mouse | 12,500 | mg/kg |
| Dermal LD50 | Rabbit | > 2,000 | mg/kg |

Terphenyl:

| | | | |
|-----------|-----|--------|-------|
| Oral LD50 | Rat | 13,200 | mg/kg |
|-----------|-----|--------|-------|

12 ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with all local, state, and federal regulations.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.



Material Safety Data Sheet

AC-[®] 215 Class A Base

MSDS No: 32151-04
 Effective: 01/26/09
 Supersedes: 05/09/08
 Page: 5 of 6

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------|--|------------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin solution | Y | Y | Y |
| | DOT Label: Flammable Liquid | UN/NA Id Number: | UN 1866 | |
| | Hazard Class: 3 (IATA/49CFR) 3.3 (IMO) | USPS Mailability | No | |
| | Packaging Group: II | | | |

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

TSCA Section 8(d) Data Reporting Rule
 Toluene

SARA Section 313 Toxic Chemicals -
 Toluene

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

| | | |
|--|----------------|---------|
| Calcium carbonate | 471-34-1 | 20 - 25 |
| Toluene | 108-88-3 | 5 - 10 |
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Terphenyl, hydrogenated | 61788 - 32 - 7 | 1 - 5 |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|-----------------------------|----------------|---------|
| Quartz (crystalline silica) | 14808 - 60 - 7 | < 0.01* |
| Toluene | 108-88-3 | 5 - 10 |

Cancer Hazard or Reproductive Hazard.

* Trace = present at less than 0.01 percent.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).



Material Safety Data Sheet

AC-[®] 215 Class A Base

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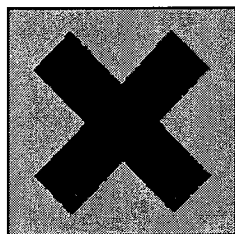
Class B Division 2

Class D Division 2 Sub-division A
Class D Division 2 Sub-division B

CEPA - NPRI - Toluene

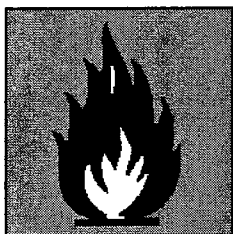
European Union:
Preparation classification:

Xn



Harmful

F



Highly Flammable

N



Dangerous for Environment

Contains:

601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- R 11 Highly flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 63 Possible risk of harm to the unborn child.
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - no smoking.
- S 25 Avoid contact with eyes.
- S 36/37 Wear suitable protective clothing and gloves.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | | |
|-----------------------------|---|---|-------|--------|----|
| CHEMICAL LOCATION | Class I Room | | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | |
| | | | 6 | GRID # | I2 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|--------------------------|---|---|----|--|---|----|
| CHEMICAL NAME | AC-145 Adhesion Promoter | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 11 |
| COMMON NAME | SAME | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 10 | * If EHS is "Yes", all amounts must be LBS | | |

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | | |
|--------------------------------------|---|----|-----------------------|---|----|---|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH |
|--------------------------------------|---|----|-----------------------|---|----|---|

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|-----|----|---------------------|---|----|------------------|----|
| AVERAGE DAILY AMOUNT | 0.7 | 19 | MAXIMUM DAILY AMOUNT | 100 | 20 | ANNUAL WASTE AMOUNT | 1 | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|-----|----|---------------------|---|----|------------------|----|

| | | | | | | | | |
|-------|---|----|--------------|----------|----|-------------------|------------|----|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 30 Gallons | 25 |
|-------|---|----|--------------|----------|----|-------------------|------------|----|

| | | | | | | |
|--|---|--|--|--|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input checked="" type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|--|--|--|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

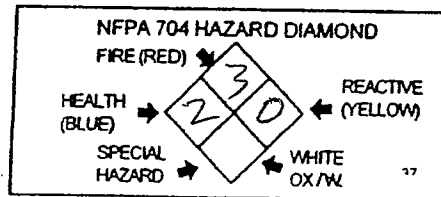
| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------------------------|---|--|--------------------|
| 1 20-25 ²⁹ | METHYL ETHYL KETONE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 31 78-93-3 |
| 2 5-10 ²⁹ | METALLIC ESTER | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 31 Trade Secret |
| 3 1-5 ²⁹ | ISOPROPYL ALCOHOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 31 67-63-0 |
| 4 balance ²⁹ | TRADE SECRET | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 31 Trade Secret |
| 5 60-65 ²⁹ | WATER | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 31 7732-18-5 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

| | | |
|------------------|--|----|
| UNDOT # | UN 1866 | 33 |
| | Refer to shipping papers or MSDS | |
| DOT HAZARD CLASS | 3 | 34 |
| | Refer to shipping papers or MSDS | |
| EPCRA | <input type="checkbox"/> YES <input type="checkbox"/> NO | 35 |
| X | | 36 |
| | If EPCRA, Please Sign Here | |



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®]145 Adhesion Promoter

MSDS No: 11450-06
Effective: 01/26/09
Supersedes: 08/02/04
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-145 Adhesion promoter
Generic Description: Titanium Chelate
Product Use: Adhesion promoter

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
Methyl ethyl ketone
Metallic esters
Isopropyl Alcohol
Non - hazardous and other ingredients below reportable levels
Water

| CAS # | Approximate % (w/w) |
|---------------|---------------------|
| 78 - 93 - 3 | 20 - 25 |
| Proprietary | 5 - 10 |
| 67 - 63 - 0 | 1 - 5 |
| Proprietary | Balance |
| 7732 - 18 - 5 | 60 - 65 |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE MODERATE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause moderate irritation. May cause corneal opacity (clouding of the eye surface). Can cause burning sensation, tearing and redness.

SKIN CONTACT: Prolonged or repeated contact may cause irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and incoordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

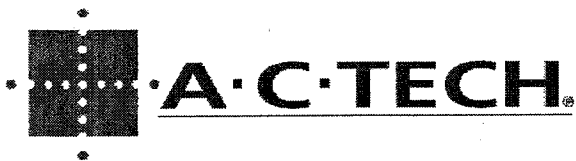
INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness. Faintness, headache, and incoordination.

TARGET ORGANS/CHRONIC EFFECTS: Nervous system. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---------------------|-------|------|-----|------|
| Methyl ethyl ketone | No | No | No | No |
| Metallic esters | No | No | No | No |
| Isopropyl alcohol | No | No | No | No |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|----------------------|---|--------------|----------------------|
| Flash Point.....: | 23F - 5C | Method.....: | Setaflash Closed Cup |
| Explosive Lmts.....: | LEL(%)Not Determined UEL(%)Not Determined | | |
| Autoignition.....: | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations.

Methyl ethyl ketone

RQ = 5000 LB



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7. HANDLING AND STORAGE

Storage Temperature < 100F 37.7C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles face shield, and gloves. Professionally launder contaminated clothing before re - using.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | |
|---------------------|---------|
| Methyl ethyl ketone | 200 ppm |
| Isopropyl alcohol | 400 ppm |

ACGIH - STEL

| | |
|---------------------|---------|
| Methyl ethyl ketone | 300 ppm |
| Isopropyl alcohol | 500 ppm |

OSHA - PEL

| | |
|---------------------|---------|
| Methyl ethyl ketone | 200 ppm |
| Isopropyl alcohol | 400 ppm |

OSHA - STEL

| | |
|---------------------|---------|
| Methyl ethyl ketone | 300 ppm |
| Isopropyl alcohol | 500 ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------------|----------------|---------------------------|------------------------|
| Appearance.....: | Blue | Odor.....: | Slight |
| Physical State.....: | Liquid | Solubility.....: | Slightly soluble |
| pH.....: | Not Applicable | VOC Material (Rule 1124): | 240 g/l (2.01 lbs/gal) |
| Specific Gravity....: | 0.95 | VOC Coating (Rule 1124): | 680 g/l (5.70 lbs/gal) |



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% Non - Vol(w/w).....: 6.5

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: High temperatures.
INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Table with 4 columns: Component, Species, Dose, and Toxicity. Includes Methyl ethyl ketone data for Oral LD50, Dermal LD50, and Inhalation LC50 in Rat, Mouse, and Rabbit.

Metallic esters:
Eye, skin, and respiratory tract irritant.

Table with 4 columns: Component, Species, Dose, and Toxicity. Includes Isopropyl alcohol data for Oral LD50, Dermal LD50, and Inhalation LC50 in Rat, Dog, Mouse, and Rabbit.

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.
GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.
GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

Table with 5 columns: Weight (lb.), Shipping Name, 49 CFR, IATA, and IMO. Includes DOT Label: Flammable Liquid and UN/NA Id Num.: UN 1866.



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Hazard Class.....: 3 (IATA/49CFR) 3.2 (IMO)
Packing Group.....: II

USPS Mailability...: No

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals - Methyl ethyl ketone

TSCA Section 12(b) Export Notification - Isopropyl alcohol

TSCA Section 8(d) Data Reporting Rule - Methyl ethyl ketone

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical
Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

| | | |
|--|---|---------|
| Water | 7732 - 18 - 5 | 60 - 65 |
| Methyl ethyl ketone | 78 - 93 - 3 | 20 - 25 |
| Environmental Hazard | | |
| Metallic esters | Proprietary (NJ Trade Secret Reg # 00850201001-5522P) | 5 - 10 |
| Isopropyl alcohol | 67 - 63 - 0 | 1 - 5 |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous
Materials Information System (WHMIS).

Class B Division 2

Class D Division 2 Sub - division B

CEPA - NPRI

Methyl ethyl ketone
Isopropyl alcohol



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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet

NSN:
8030-00-560-8756



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 30035 38 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.** 3

I. FACILITY INFORMATION

CHEMICAL LOCATION **CLASS I Room** 4
CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP# **1** 6 GRID# **I2** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **AC-137 Red Adhesion Prom.** WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME **same** 9 An EHS Chemical Yes No 12
CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **0.1** 19 MAXIMUM DAILY AMOUNT **10** 20 ANNUAL WASTE AMOUNT 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **Gallon** 25
 c. POUNDS d. TONS
If EHS amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

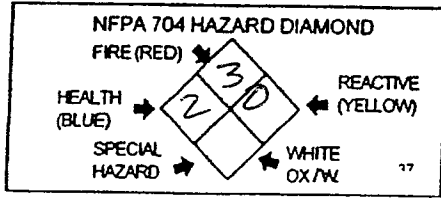
STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|--------------|---|---|-----------------|
| 1 70-90 29 | ETHANOL 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 64-17-5 32 |
| 2 5-15 29 | TITANATE ESTER 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | Trade Secret 32 |
| 3 1-5 29 | METHANOL 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 67-56-1 32 |
| 4 1-5 29 | ISOPROPYL ALCOHOL 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 67-63-0 32 |
| 5 balance 29 | TRADE SECRET 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | N.A. 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # UN1170 33
Refer to shipping papers or MSDS
DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS
EPCRA YES NO 35
X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 137 Red, Adhesion Promoter

MSDS No: 11370-03
Effective: 01/26/09
Supercedes: 08/09/05
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-137 Red Adhesion promoter
Generic Description: Titanate mixture
Product Use: Adhesion promoter

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Ethanol
Titanate ester
Methyl Alcohol
Isopropyl Alcohol
Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 64 - 17 - 5 | 70 - 90 |
| Proprietary | 5 - 15 |
| 67 - 56 - 1 | 1 - 5 |
| 67 - 63 - 0 | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. CAUSES SEVERE EYE IRRITATION. CAUSES SEVERE SKIN IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation.

SKIN CONTACT: Causes severe irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness headaches, and loss of coordination.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach.

TARGET ORGANS/CHRONIC EFFECTS: Eyes. Skin. Heart, Central Nervous System, Liver.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|---------|-----|------|
| Ethanol | No | No | No | No |
| Titanate ester | No | No | No | No |
| Methyl alcohol | No | No | No | No |
| Isopropyl Alcohol | No | Group 3 | No | No |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get prompt medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get prompt medical attention. Professionally wash clothing before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|------------------------|----------------------|--------------|----------------|
| Flash Point.....: | 55°F (13°C) | Method.....: | Tag Closed Cup |
| Explosive Limits.....: | LEL(%) 3.3 UEL(%) 19 | | |
| Autoignition.....: | 685°F | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations. No regulated ingredients.



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7. HANDLING AND STORAGE

Storage Temperature < 100°F (38.8°C)

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles, face shield, and gloves. Professionally launder contaminated clothing before re - use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

ACGIH - STEL

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

OSHA - PEL

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

OSHA - STEL

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.



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AC-® 137 Red, Adhesion
Promoter

MSDS No: 11370-03
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9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|--------------------|-----------------|---------------------|-----------------|
| Appearance.....: | Red | Odor.....: | Strong |
| Physical State...: | Liquid | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | Boiling Point.....: | Not Established |
| Vapor Pressure..: | Not Established | Vapor Density.....: | Approximately 5 |
| Evaporation Rt.: | Not Established | VOC Material.....: | 719 g/l |
| Specific Gravity.: | 0.81 | % Non - Vol(w/w)..: | 89% |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers.

11. TOXICITY INFORMATION

COMPONENTS:

| | | | | |
|-----------------|-----------------|--------|--------|----------------|
| Titanate ester: | | | | |
| | Oral LD50 | Rat | 11,000 | mg/kg |
| | Dermal LD50 | Rabbit | > 16 | ml/Kg |
| | Inhalation LC50 | Rat | 7.78 | mg/L/4 - hours |
| Methyl Alcohol | | | | |
| | Oral LD50 | Rat | 5,628 | mg/kg |
| | Inhalation LC50 | Rat | 64,000 | ppm |
| Isopropanol | | | | |
| | Oral LD50 | Mouse | 3600 | mg/kg |
| | Oral LD50 | Rabbit | 6410 | mg/kg |
| | Oral LD50 | Rat | 5045 | mg/kg |
| | Dermal LD50 | Rabbit | 12800 | mg/kg |

12. ECOLOGICAL INFORMATION

No data are available on this product.

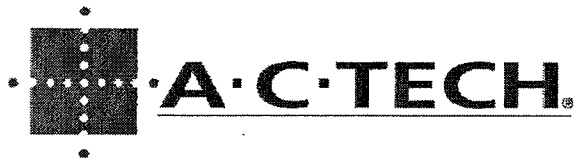
13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



Material Safety Data Sheet
AC-® 137 Red, Adhesion
Promoter

MSDS No: 11370-03
Effective: 01/26/09
Supercedes: 08/09/05
Page: 5 of 6

14. TRANSPORT INFORMATION

| | | | | |
|---------------------|--------------------------|----------------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IAYA | IMO |
| | ETHANOL SOLUTIONS | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num.....: | UN 1170 | |
| Hazard Class.....: | 3 (IATA/49CFR) 3.2 (IMO) | USPS Mailability...: | No | |
| Packing Group.....: | II | | | |

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302
 (TPQ) - No regulated ingredients.

SARA Section 313 Toxic Chemicals - No regulated ingredients.

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
 Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

| | | |
|--|-------------|---------|
| Pennsylvania - New Jersey R - T - K | | |
| Reagent Alcohol | 64 - 17 - 5 | 70 - 90 |
| Titanate ester | Proprietary | 5 - 10 |
| Methyl Alcohol | 67 - 56 - 1 | 1 - 5 |
| Isopropyl Alcohol | 67 - 63 - 0 | 1 - 5 |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65 - This product contains Reagent alcohol, a chemical known to the state of California to cause birth defects or other reproductive harm.

New Jersey Trade Secret Registry Number: 346515 - 5227P

| | | |
|-------------------|-------------|---------|
| Florida - | | |
| Reagent Alcohol | 64 - 17 - 5 | 70 - 90 |
| Methyl Alcohol | 67 - 56 - 1 | 1 - 5 |
| Isopropyl Alcohol | 67 - 63 - 0 | 1 - 5 |

CONEG - No data available.



Material Safety Data Sheet
AC-[®] 137 Red, Adhesion
Promoter

MSDS No: 11370-03
Effective: 01/26/09
Supersedes: 08/09/05
Page: 6 of 6

CANADA:

CEPA - NPRI - No regulated ingredients.

Canadian Chemical Inventory

Domestic Substance List
Listed - NDSL.

WHMIS – B2, D2B

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|-------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | MAP # | 1 |
| GRID # | G2 → G7 | | |

II. CHEMICAL INFORMATION

| | | | | | | |
|---------------|----------------------|--|---|---|--------------|---|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| COMMON NAME | AC-730 Class RV Base | | * If EPCRA see instructions | | | |
| CAS # | 10 | | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | |

| | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|-------------|---|--------|---|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | CURIES | - |
|----------------------------|----------------------------------|--|-----------------------------------|-------------|---|--------|---|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|-----------------------|---|--------------------------------------|--|---|---|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH |
|--------------------------------------|-----------------------------------|---|---------------------------------|-----------------------|---|--------------------------------------|--|---|---|

| | | | | | | | |
|----------------------|----|----------------------|-----|---------------------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 15 | MAXIMUM DAILY AMOUNT | 200 | ANNUAL WASTE AMOUNT | 15 | STATE WASTE CODE | 22 |
|----------------------|----|----------------------|-----|---------------------|----|------------------|----|

| | | | | | | | | |
|-------|--|--|------------------------------------|----------------------------------|--------------|----------|-------------------|----------------|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | DAYS ON SITE | 365 DAYS | LARGEST CONTAINER | 50 Gallon Drum |
|-------|--|--|------------------------------------|----------------------------------|--------------|----------|-------------------|----------------|

| | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP. | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|

| | | | |
|------------------|--|---|---|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT |
|------------------|--|---|---|

| | | | | |
|---------------------|--|---|---|---------------------------------------|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC |
|---------------------|--|---|---|---------------------------------------|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|-------------|
| 25-30 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 10-15 | calcium carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-7 |
| 1-5 | Zinc Salt | <input type="checkbox"/> Yes <input type="checkbox"/> No | Proprietary |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

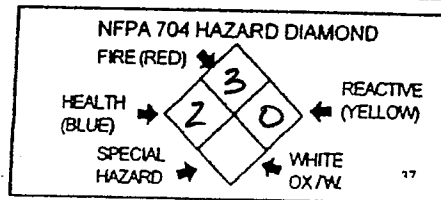
PLACARDING INFORMATION

UNDOT # UN 1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (ATA CFR 49) 32 (IMD) 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 730 Class RV Base

MSDS No: 37309-01
Effective: 01/27/09
Supercedes: 05/13/05
Page: 1 of 6

SIN #834-100

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-[®] 730 Class RV Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Toluene
Calcium carbonate
Zinc salt
Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|--------------|---------------------|
| 108 - 88 - 3 | 25 - 30 |
| 471 - 34 - 1 | 10 - 15 |
| Proprietary | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. May cause corneal opacity (clouding of the eye surface). Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

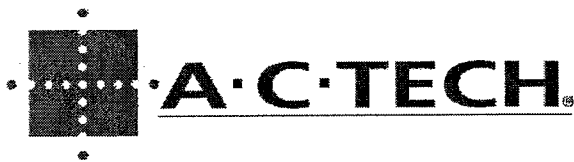
INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Blood and/or blood-forming organs. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Blood and/or blood-forming organs. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Calcium carbonate | No | No | No | No |
| Toluene | No | No | No | No |
| Zinc salt | No | No | No | No |



Material Safety Data Sheet AC-® 730 Class RV Base

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|--------------------|------------------------|--------------|----------------------|
| Flash Point.....: | 40°F(4°C) | Method.....: | Setaflash Closed Cup |
| Explosive Lmts: | LEL(%) Not Established | UEL(%) | Not Established |
| Autoignition.....: | Not Established | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flashback. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



Material Safety Data Sheet AC-[®] 730 Class RV Base

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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING!** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: **Attention!** This container hazardous when empty. Follow label warnings even after container is emptied since empty since container may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not re-use empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|----|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Toluene | 50 | Ppm (skin) |

OSHA - PEL

| | | |
|-------------------|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles or safety glasses with side shields. An eye wash facility should be readily available.

SKIN PROTECTION: Wear rubber boots and apron, protective clothing, and impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------|---------------------------------------|-------------------|----------------|
| Appearance: | Beige | Odor: | Mercaptan |
| Physical State: | Liquid | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Applicable |
| Vapor Density: | Not Applicable | Evaporation Rate: | Not Applicable |
| VOC Material: | Approximately 250 g/l (2.10 lbs./gal) | Specific Gravity: | 1.31 |
| VOC Mixed Material: | Approximately 244 g/l (2.05 lbs./gal) | %Non-Vol (w/w): | 84 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet

AC-[®] 730 Class RV Base

MSDS No: 37309-01
Effective: 01/27/09
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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Zinc salt:

May cause transient irritation to eyes and/or skin. Zinc salts may cause liver and kidney damage.

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|---------------------|--------------------------|-------------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin solution | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num..: | UN 1866 | |
| Hazard Class.....: | 3 (IATA/49CFR) 3.2 (IMO) | USPS Mailability: | No | |
| Packing Group.....: | II | | | |

For a two compartment container that contains parts A and B. See above information.



Material Safety Data Sheet AC-[®] 730 Class RV Base

MSDS No: 37309-01
Effective: 01/27/09
Supercedes: 05/13/05
Page: 5 of 6

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - None

SARA Section 313 Toxic Chemicals

Zinc salt
Zinc compounds

TSCA Section 12(b) Export Notification: None

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|-------------------|--------------|---------|
| Calcium carbonate | 471 - 34 - 1 | 10 - 15 |
| Toluene | 108-88-3 | 25 - 30 |

Environmental Hazard.

| | | |
|-----------|-------------|-------|
| Zinc salt | Proprietary | 1 - 5 |
|-----------|-------------|-------|

Environmental and Special Hazard.

| | | |
|--|-------------|---------|
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |
|--|-------------|---------|

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

| | | |
|--------------|-------------|---------|
| Formaldehyde | 50 - 00 - 0 | < 0.01* |
|--------------|-------------|---------|

Cancer Hazard

* Trace = present at less than 0.01 percent

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

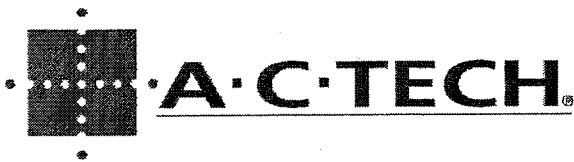
Class B Division 2

Class D Division 2 Sub-division A

Class D Division 2 Sub-division B

CEPA - NPRI

Toluene
Zinc salt
Zinc compounds



Material Safety Data Sheet AC-[®] 730 Class RV Base

MSDS No: 37309-01
Effective: 01/27/09
Supercedes: 05/13/05
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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

FACILITY ID# 30035 38 BUSINESS NAME ADVANCED CHEMISTRY & TECHNOLOGY, INC. 3

I. FACILITY INFORMATION

CHEMICAL LOCATION MATERIAL STORAGE AREA 4
CONFIDENTIAL LOCATION Yes No 5 MAP # 1 6 GRID # G2 → G7 7

II. CHEMICAL INFORMATION

CHEMICAL NAME Polysulfide Sealant WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME AC-730 Class C Base 9 An EHS Chemical Yes No 12
CAS # _____ 10 FIRE CODE HAZARD CLASSES (supplied by GGFD) _____ 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES _____ 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 100 19 MAXIMUM DAILY AMOUNT 5000 20 ANNUAL WASTE AMOUNT 250 21 STATE WASTE CODE _____ 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE 365 DAYS 24 LARGEST CONTAINER 50 Gallon Drum 25
 c. POUNDS d. TONS
*If EHS amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP. t. OTHER _____

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|----------|---|---|----------------|
| 15-20 29 | Calcium carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 471-34-1 32 |
| 1-5 29 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 108-88-3 32 |
| 1-5 29 | Zinc compound | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | Proprietary 32 |
| _____ 29 | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | _____ 32 |
| _____ 29 | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | _____ 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

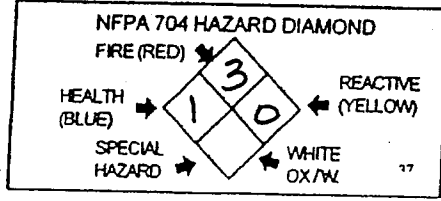
PLACARDING INFORMATION

UNDOT # UN 1866 33 Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (IAA) (FRAG) 3.2 (IMD) 34 Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36 If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®]730 Class C Base

MSDS No: 37303-07
Effective: 01/27/09
Supercedes: 09/20/04
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-730 Class C Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 1* | 1 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
Calcium carbonate
Toluene
Zinc compound
Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|--------------|---------------------|
| 471 - 34 - 1 | 15 - 20 |
| 108 - 88 - 3 | 1 - 5 |
| Proprietary | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. May cause corneal opacity (clouding of the eye surface). Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Blood and/or blood-forming organs. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Blood and/or blood-forming organs. Lungs and respiratory system. Skin.

CARCINOGENICITY:

Calcium carbonate
Toluene
Zinc compound

| ACGIH | IARC | NTP | OSHA |
|-------|------|-----|------|
| No | No | No | No |
| No | No | No | No |
| No | No | No | No |



Material Safety Data Sheet AC-[®]730 Class C Base

MSDS No: 37303-07
Effective: 01/27/09
Supercedes: 09/20/04
Page: 2 of 6

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|--------------------|------------------------|--------------|----------------------|
| Flash Point.....: | 67°F (19.4°C) | Method.....: | Setaflash Closed Cup |
| Explosive Lmts: | LEL(%) Not Established | UEL(%) | Not Established |
| Autoignition.....: | Not Established | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flashback. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



Material Safety Data Sheet AC-[®]730 Class C Base

MSDS No: 37303-07
Effective: 01/27/09
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Page: 3 of 6

7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING!** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: **Attention!** This container hazardous when empty. Follow label warnings even after container is emptied since empty since container may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not re-use empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|----|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Toluene | 50 | ppm |
| Zinc compound | 10 | mg/M ³ Total dust |

OSHA - PEL

| | | |
|-------------------|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |
| Zinc compound | 10 | mg/M ³ Total dust |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles or safety glasses with side shields. An eye wash facility should be readily available.

SKIN PROTECTION: Wear rubber boots and apron, protective clothing, and impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------|--------------------------------------|-------------------|----------------|
| Appearance: | Beige | Odor: | Mercaptan |
| Physical State: | Liquid | Solubility: | Insoluble |
| PH: | Not Applicable | Vapor Pressure: | Not Applicable |
| Vapor Density: | Not Applicable | Evaporation Rt.: | Not Applicable |
| VOC Material: | Approximately 68 g/l (0.57 lbs./gal) | Specific Gravity: | 1.41 |
| %Non-Vol (w/w): | 94 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet

AC-[®]730 Class C Base

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: High temperatures.
INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Calcium carbonate:
Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

| | | | |
|-----------------|--------|--------|-------------|
| Toluene: | | | |
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Zinc compound:
May cause transient irritation to eyes and/or skin.

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|----------------|--------------------------|-------------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin solution | Y | Y | Y |
| DOT Label: | Flammable Liquid | UN/NA Id Number: | UN 1866 | |
| Hazard Class: | 3 (IATA/49CFR) 3.2 (IMO) | USPS Mailability: | No | |
| Packing Group: | II | | | |

For a two-compartment container that contains parts A and B. See above information.



Material Safety Data Sheet AC-[®]730 Class C Base

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15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat

SARA Section 313 Toxic Chemicals

- Toluene
- Zinc compound
- Zinc compounds

TSCA Section 8(d) Data Reporting Rule

- Toluene

TSCA Section 12(b) Export Notification - None

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|--------------|---------|
| Calcium carbonate | 471 - 34 - 1 | 10 - 20 |
| Toluene | 108-88-3 | 1 - 5 |
| Environmental Hazard. | | |
| Zinc compound | Proprietary | 1 - 5 |
| Environmental and Special Hazard. | | |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Formaldehyde 50 - 00 - 0 < 0.01*

Cancer Hazard

* Trace = present at less than 0.01 percent

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Class B Division 2

Class D Division 2 Sub-division A

Class D Division 2 Sub-division B

CEPA - NPRI

- Toluene
- Zinc compound
- Zinc compounds



Material Safety Data Sheet AC-[®]730 Class C Base

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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|---------------------|---|-----------------------------|---|---|-----------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | AC-635 Class A Base | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | | | | |

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|---|---|---|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|---|----|----------------------|-----|----|---------------------|----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 2 | 19 | MAXIMUM DAILY AMOUNT | 500 | 20 | ANNUAL WASTE AMOUNT | 10 | 21 | STATE WASTE CODE | 22 |
|----------------------|---|----|----------------------|-----|----|---------------------|----|----|------------------|----|

| | | | | | | | | | |
|---|-------------------------------------|--|-------------------------------------|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
| <input checked="" type="checkbox"/> c. POUNDS | | <input type="checkbox"/> d. TONS | * If EHS, amount must be in pounds. | | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------|---|--|-----------|
| 1 15-20 | Calcium carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 2 5-10 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 3 1-5 | Calcium Chromate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 3765-19-0 |
| 4 1-5 | Strontium Chromate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 7789-06-2 |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

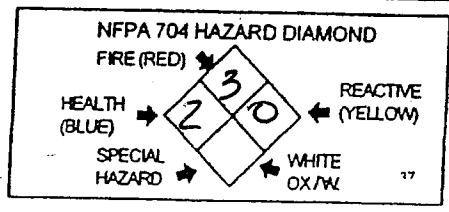
PLACARDING INFORMATION

UNDOT # UN 1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (DATA/CFR49) 3.3 (IMB)
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet
AC-® 635 Class A Base

MSDS No: 36351-08
Effective: 03/16/09
Supersedes: 01/27/09
Page: 1 of 7

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-635 Class A Base
 Generic Description: Polysulfide sealant
 Product Use: Aircraft sealant

For information, contact:
 Advanced Chemistry & Technology
 7341 Anaconda Avenue
 Garden Grove, CA 92841-2921
 714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Calcium carbonate
 Toluene
 Calcium chromate
 Strontium chromate
 Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|----------------|---------------------|
| 471-34-1 | 15 – 20 |
| 108-88-3 | 5 – 10 |
| 13765 - 19 - 0 | 1 – 5 |
| 7789-06-2 | 1 – 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. MAY CAUSE ALLERGIC SKIN REACTION AND SENSITIZATION. CAUSES SEVERE EYE IRRITATION. CAUSES SEVERE SKIN IRRITATION. CAUSES SEVERE DIGESTIVE TRACT IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOJMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: Causes severe irritation. May be absorbed through the skin. May cause allergic skin reactions and sensitization.

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): Severely irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Eyes. Skin.

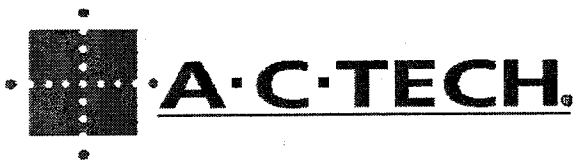
CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys., Nervous system. Blood and/or blood-forming organs. Lungs and respiratory system. Skin. Immune systems and/or specific chemical allergies..

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|--------------------|-------|------|-----|------|
| Calcium carbonate | No | No | No | No |
| Toluene | No | No | No | No |
| Calcium chromate | A1 | 1 | Yes | No |
| Strontium chromate | A1 | 1 | Yes | No |

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.



Material Safety Data Sheet AC-® 635 Class A Base

MSDS No: 36351-08
Effective: 03/16/09
Supersedes: 01/27/09
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SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. For large exposures use an emergency shower. Remove contaminated clothing and shoes. Get immediate medical attention. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|------------------------|---------|----------------------|
| Flash Point: | 62°F 16.6°C | Method: | Setaflash Closed Cup |
| Explosive Limits: | LEL (%) Not Determined | UEL(%) | Not Determined |
| Autoignition: | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide. Low molecular weight hydrocarbons.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc. (and flash back. During a fire irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical or carbon dioxide. LARGE FIRES: Water spray, fog, or foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene RQ = 1000 LB
Calcium chromate RQ = 10 LB
Strontium chromate RQ = 10 LB

7. HANDLING AND STORAGE



Material Safety Data Sheet AC-[®] 635 Class A Base

MSDS No: 36351-08
Effective: 03/16/09
Supersedes: 01/27/09
Page: 3 of 7

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles face-shield, and gloves. Professionally launder contaminated clothing before re-use .

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE: CONTROL/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|--------------------|------|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Toluene | 50 | ppm – Skin |
| Calcium chromate | 0.01 | mg/M ³ |
| Strontium chromate | 0.5 | ug/M ³ |

OSHA - PEL

| | | |
|--------------------|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |
| Calcium chromate | 0.1 | mg/M ³ -Ceiling |
| Strontium chromate | 0.1 | mg/M ³ Ceiling |

Chromium (VI) insoluble cpds., as Cr

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: An eye wash facility should be readily available. Wear chemical splash goggles.

SKIN PROTECTION: Wear protective clothing, and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9 PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------|-----------------------|-----------------|-------------------------|
| Appearance: | Yellow | Odor: | Sulfide |
| Physical State: | Liquid | Solubility: | Insoluble |
| pH: | Not Applicable | VOC Base: | 123 g/L (1.1 lbs./gal.) |
| VOC Material: | 111 g/l (0.93 lb/gal) | Vapor density: | Heavier than air |
| Specific Gravity: | 1.41 | %Non-Vol.(w/w): | 91 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.



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CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Strong bases. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Toluene:

Table with 4 columns: Test Type, Species, Dose, and Units. Rows include Oral LD50 (Rat: 5,000 mg/kg), Dermal LD50 (Rabbit: 12,124 mg/kg), and Inhalation LC50 (Mouse: 5,320 ppm/8-Hours).

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e. pneumoconiosis).

Strontium chromate:

Can cause liver and kidney injury. Possible skin and respiratory sensitizer. Penetrating slow healing ulcers may occur after contact with non-intact skin or mucous membranes.

Table with 3 columns: Test Type, Species, and Dose. Row: Oral LD50 (Rat: 3,118 mg/kg).

Calcium chromate:

Can cause liver and kidney injury. Penetrating slow healing ulcers may occur after contact with non-intact skin or mucous membranes. Chromate dusts have been shown to cause lung and other cancers in humans and laboratory animals.

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

Table with 5 columns: Weight (lb.), Shipping Name, 49 CFR, IATA, and IMO. Rows for weight categories < 294 and >= 295.

DOT Label.....: Flammable Liquid
Hazard Class.....: 3 (IATA/49CFR) 3.3 (IMO)
UN/NA Id Num....: UN 1866
USPS Mailability: No



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Packing Group.....: II

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - none

SARA Section 313 Toxic Chemicals

- Toluene
- Strontium chromate
- Chromium compounds

TSCA Section 8(d) Data Reporting Rule

- Toluene

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R - T - K

| | | |
|-------------------|--------------|---------|
| Calcium carbonate | 471 - 34 - 1 | 15 - 20 |
| Toluene | 108 - 88 - 3 | 5 - 10 |

Environmental Hazard.

| | | |
|--------------------|----------------|-------|
| Calcium chromate | 13765 - 19 - 0 | 1 - 5 |
| Strontium chromate | 7789 - 06 - 2 | 1 - 5 |

Environmental and Special Hazard.

| | | |
|--|----------------|---------|
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|---------|--------------|---------|
| Toluene | 108 - 88 - 3 | 10 - 20 |
|---------|--------------|---------|

Reproductive Hazard.

| | | |
|--------------------|----------------|-------|
| Calcium chromate | 13765 - 19 - 0 | 1 - 5 |
| Strontium chromate | 7789 - 06 - 2 | 1 - 5 |

Cancer Hazard.

| | | |
|--------------|-------------|--------|
| Formaldehyde | 50 - 00 - 0 | < 0.01 |
|--------------|-------------|--------|

Cancer Hazard.

* Trace = present at less than 0.01 percent.

CONEG - No data available.

CANADA:



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This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 2
Class D Division 2 Sub-division B

CEPA - NPRI

Toluene
Strontium chromate
Calcium chromate
Chromium compounds

European Union:

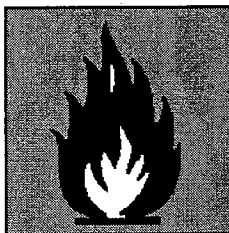
Preparation classification:

T



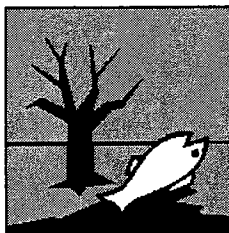
Toxic

F



Highly Flammable

N



Dangerous for Environment

Contains:

601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- R 11 Highly flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R 45 May cause cancer.
- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 63 Possible risk of harm to the unborn child.
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - no smoking.
- S 25 Avoid contact with eyes.
- S 36/37 Wear suitable protective clothing and gloves.
- S 57 Use appropriate containment to avoid environmental contamination.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.



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END OF MATERIAL SAFETY DATA SHEET



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | |
|-------------------|-----------------------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | 4 |
|-------------------|-----------------------|---|

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |
|-----------------------------|---|---|-------|---|---|--------|---------|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------------------|-------|---|---|--------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|---------------------|-------|---|---|--------------|---|----|

| | | | | | |
|-------------|---------------------|---|-----------------|---|----|
| COMMON NAME | AC-615 Class A Base | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
|-------------|---------------------|---|-----------------|---|----|

| | | | |
|-------|----|---|----|
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 |
|-------|----|---|----|

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | |
|--------------------------------------|---|----|-----------------------|---|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | 18 |
|--------------------------------------|---|----|-----------------------|---|----|

| | | | | | | | | | | |
|----------------------|---|----|----------------------|-----|----|---------------------|----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 3 | 19 | MAXIMUM DAILY AMOUNT | 250 | 20 | ANNUAL WASTE AMOUNT | 50 | 21 | STATE WASTE CODE | 22 |
|----------------------|---|----|----------------------|-----|----|---------------------|----|----|------------------|----|

| | | | | | | | | | |
|-------|---|---|----|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> b. CUBIC FEET <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
|-------|---|---|----|--------------|----------|----|-------------------|----------------|----|

| | | | | | | |
|--|---|---|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|---|--|---|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----------------------|---|--|--------------|
| 1 25.35 ²⁹ | Limestone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 1317-65-3 |
| 2 10.20 ²⁹ | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 108-88-3 |
| 3 1.5 ²⁹ | Strontium Chromate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 7789-06-2 |
| 4 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

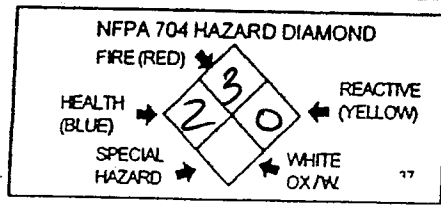
PLACARDING INFORMATION

UNDOT # UN 1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (IATA/CFR49) 3.3 (IMD)
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®]615 Class A Base

MSDS No: 36151-06
Effective: 01/27/09
Supercedes: 12/17/08
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-615 Class A Base
Generic Description: Polysulfide sealant
Product Use: Access door sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFOMRATION ON INGREDIENTS

| COMMON NAME | CAS# | Approximate % (w/w) |
|---|---------------|---------------------|
| Limestone | 1317 - 65 - 3 | 25 - 35 |
| Toluene | 108 - 88 - 3 | 10 - 20 |
| Strontium chromate | 7789 - 06 - 2 | 1 - 5 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. MAY CAUSE ALLERGIC SKIN REACTION AND SENSITIZATION. CAUSES SEVERE EYE IRRITATION. CAUSES SEVERE SKIN IRRITATION. CAUSES SEVERE DIGESTIVE TRACT IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: Causes severe irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis). May be absorbed through the skin. May cause allergic skin reactions and sensitization.

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

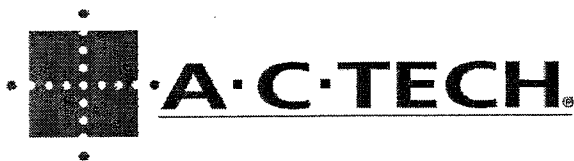
INGESTION (Swallowing): Severely irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Nervous system. Blood and/or blood - forming organs. Lungs and respiratory system. Skin. Immune systems and/or specific chemical allergies.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---------------------------|-------|------|-----|------|
| Limestone | No | No | No | No |
| Toluene | No | No | No | No |
| Strontium chromate | A1 | 1 | Yes | No |
| Aromatic carboxylic ester | No | No | No | No |



Material Safety Data Sheet AC-® 615 Class A Base

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. For large exposures use an emergency shower. Remove contaminated clothing and shoes. Get immediate medical attention. Professionally wash clothing before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|--------------------|-----------------------|--------------|----------------------|
| Flash Point.....: | 91F 32.7C | Method.....: | Setaflash Closed Cup |
| Explosive Lmths.: | LEL(%) Not Determined | UEL(%) | Not Determined |
| Autoignition.....: | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide. Low molecular weight hydrocarbons.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical or carbon dioxide. LARGE FIRES: water spray, fog, or foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a components' RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations.

Toluene
Strontium chromate

RQ = 1000 LB
RQ = 10 LB



Material Safety Data Sheet

AC-® 615 Class A Base

MSDS No: 36151-06
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Supercedes: 12/17/08
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7. HANDLING AND STORAGE

Storage Temperature < 120°F 48.8°C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles face-shield, and gloves. Professionally launder contaminated clothing before re - use.

EMPTY CONTAINER PRECAUTIONS: **Attention!** This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|---------------------------|-----|------------------------------|
| Limestone | 10 | mg/M ³ Total dust |
| Toluene | 50 | ppm - Skin |
| Strontium chromate | 0.5 | ug/M ³ |
| Aromatic carboxylic ester | 5 | Mg/M ³ |

OSHA - PEL

| | | |
|---------------------------|-----|------------------------------|
| Limestone | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |
| Strontium chromate | 0.1 | mg/M ³ - Ceiling |
| Aromatic carboxylic ester | 5 | Mg/M ³ |

Chromium (VI) insoluble cpds., as Cr

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles and a full - face shield. An eye wash facility should be readily available.

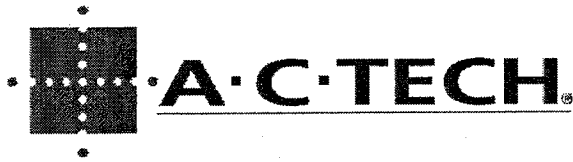
SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Industrial hygiene consultation is recommended because airborne exposure levels vary depending on the nature of the operation performed. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------|----------------|--------------------|------------------------|
| Appearance.....: | Red | Odor.....: | Sulfide |
| Physical State....: | Liquid | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | VOC Material.....: | 192 g/L (1.6 lbs./gal) |
| Specific Gravity.: | 1.47 | %Non - Vol (w/w): | 87 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet

AC-® 615 Class A Base

MSDS No: 36151-06
Effective: 01/27/09
Supersedes: 12/17/08
Page: 4 of 6

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Toluene:

| | | | |
|-----------------|--------|--------|---------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8 - Hours |

Strontium chromate:

Can cause liver and kidney injury. Possible skin and respiratory sensitized. Penetrating slow healing ulcers may occur after contact with non - intact skin or mucous membranes. Chromate dusts have been shown to cause lung and other cancers in humans and laboratory animals.

| | | | |
|----------------------------|--|-------|-------|
| Oral LD50 | Rat | 3,118 | mg/kg |
| Aromatic carboxylic ester: | DINP administered to rats caused liver enlargement and tumors of the liver and testes. | | |

12. ECOLOGICAL INFORMATION

No data is available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14 TRANSPORT INFORMATION

| | | | | |
|--------------|--|--------|------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| < 286 | Resin solution | Y | Y | Y |
| >= 286 | RQ Resin solution (strontium chromate) | Y | Y | Y |

| | | | |
|---------------------|--------------------------|------------------------|---------|
| DOT Label.....: | Flammable Liquid | UN/NA Id Num. : | UN 1866 |
| Hazard Class.....: | 3 (IATA/49CFR) 3.3 (IMO) | USPS Mailability.....: | No |
| Packing Group.....: | III | | |

All the information in this section is for non - bulk packaging (119 gallons or less: 882 lbs. or less for solids).



Material Safety Data Sheet
AC-® 615 Class A Base

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15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y- Fire Hazard
- N- Sudden Release of Pressure Hazard
- N- Reactivity Hazard
- Y- Immediate (acute) Health Hazard
- Y- Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals

- Toluene
- Strontium chromate
- Chromium compounds

TSCA Section 8(d) Data Reporting Rule

- Toluene

STATE RIGHT – TO - KNOW:

Pennsylvania - New Jersey R – T - K

| | | |
|--|---------------|---------|
| Limestone | 1317 – 65 – 3 | 25 – 35 |
| Toluene | 108 – 88 – 3 | 10 – 20 |
| Environmental Hazard. | | |
| Strontium chromate | 7789 – 06 – 2 | 1 – 5 |
| Aromatic carboxylic ester | Proprietary | 1 – 5 |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|-----------------------------|----------------|---------|
| Toluene | 108 – 88 – 3 | 25 – 35 |
| Reproductive Hazard. | | |
| Strontium chromate | 7789 – 06 – 2 | 10 – 20 |
| Cancer Hazard. | | |
| Quartz (crystalline silica) | 14808 – 60 – 7 | < 0.01* |
| Cancer Hazard. | | |

* Trace = present at less than 0.01 percent.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
 Class B Division 2
 Class D Division 2 Sub - division B
 Class D Division 2 Sub - division A

CEPA - NPRI

- Toluene
- Strontium chromate
- Chromium compounds



Material Safety Data Sheet AC-® 615 Class A Base

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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|---------------------|---|-----------------------------|--|---|-----------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | AC-360 Class A Base | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | | |

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|---|---|---|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|----|----|----------------------|-------|----|---------------------|-----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 10 | 19 | MAXIMUM DAILY AMOUNT | 2,000 | 20 | ANNUAL WASTE AMOUNT | 150 | 21 | STATE WASTE CODE | 22 |
|----------------------|----|----|----------------------|-------|----|---------------------|-----|----|------------------|----|

| | | | | | | | | | |
|-------------------------------------|--|--|----|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
| * If EHS, amount must be in pounds. | | | | | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP. | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 10-15 | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-3A-1 |
| 10-15 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 5-10 | Titanium dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-7 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # UN 1866 33

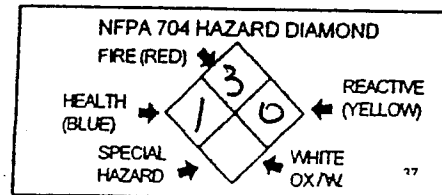
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (IATA/CPA) 3.3 (IMO)

Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 360 Class A Base

MSDS No: 33601-08
Effective: 01/26/09
Supercedes: 02/01/08
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-360 Class A Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 1 | 1 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Calcium carbonate
Toluene
Titanium dioxide
Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 471-34-1 | 10 - 15 |
| 108-88-3 | 10 - 15 |
| 13463-67-7 | 5 - 10 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Inhalation can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

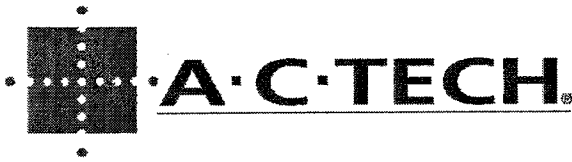
INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Titanium Dioxide | No | No | No | No |
| Toluene | No | No | No | No |
| Calcium carbonate | No | No | No | No |



Material Safety Data Sheet AC-[®] 360 Class A Base

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point.....: 41°F (5°C)
Explosive Lmts.....: LEL(%) Not Determined
Autoignition.....: Not Determined

Method.....: Setaflash Closed Cup
UEL(%) Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 lb



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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | |
|-------------------|---------------------------------|
| Titanium Dioxide | 10 mg/M ³ |
| Toluene | 50 ppm - Skin |
| Calcium carbonate | 10 mg/M ³ Total dust |

OSHA - PEL

| | |
|-------------------|--------------------------------|
| Titanium Dioxide | 10 mg/M ³ |
| Toluene | 100 ppm |
| Calcium carbonate | 5 mg/M ³ Resp. dust |

OSHA - STEL

| | |
|---------|---------|
| Toluene | 150 ppm |
|---------|---------|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

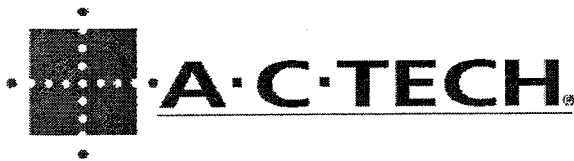
SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134. Organic vapor/mist respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------|------------------------|-------------------|-----------------|
| Appearance..... | White Liquid | Odor: | Solvent |
| Physical State..... | Liquid | Solubility: | Insoluble |
| pH..... | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density..... | Heavier than air | Evaporation Rate: | Not Established |
| VOC Material..... | 150 g/l (1.26 lbs/gal) | Specific Gravity: | 1.30 |
| %Non-Vol(w/w)..... | 88% | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-® 360 Class A Base

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors were observed at 250-mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



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14. TRANSPORT INFORMATION

| | | | | |
|-------------------|--------------------------|-----------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin solution | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num.: | UN 1866 | |
| Hazard Class....: | 3 (IATA/49CFR) 3.3 (IMO) | Packing Group.: | II | |

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:
 This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:
 Y - Fire Hazard
 N - Sudden Release of Pressure Hazard
 N - Reactivity Hazard
 Y - Immediate (acute) Health Hazard
 Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals -
 Toluene

TSCA Section 8(d) Data Reporting Rule
 Toluene

TSCA Section 12(b) Export Notification None

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
 Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

| | | |
|--|-----------------------|---------|
| Pennsylvania - New Jersey R-T-K | | |
| Toluene | 108-88-3 | 10 - 15 |
| | Environmental Hazard. | |
| Titanium Dioxide | 13463-67-7 | 5 - 10 |
| Calcium carbonate | 471-34-1 | 10 - 15 |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65
 WARNING: This product contains a chemical(s) known to the State of California to cause cancer.
 Formaldehyde 50-00-0 Trace *
 Cancer Hazard.
 * Trace = present at less than 0.01 percent.

CONEG - No data available.



Material Safety Data Sheet AC-® 360 Class A Base

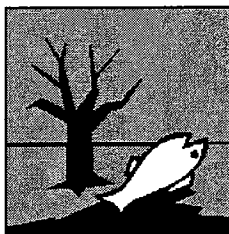
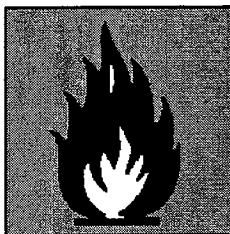
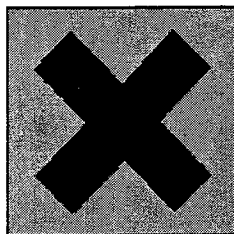
MSDS No: 33601-08
Effective: 01/26/09
Supercedes: 02/01/08
Page: 6 of 6

European Union:

Preparation classification:

Harmful

Highly Flammable Dangerous for Environment



Contains:

601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- R 11 Highly flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 63 Possible risk of harm to the unborn child.
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - no smoking.
- S25 Avoid contact with eyes.
- S 36/37 Wear suitable protective clothing and gloves.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 3 Class D Division 2 Sub-division B

CEPA - NPRI - No regulated ingredients.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|---------|---------|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP # | 1 |
| | 6 | GRID # | G2 → G7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|---------------------|---|-------|--|---|-----------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | AC-350 Class C Base | | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | | |

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|---|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|-------|----|---------------------|-----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 100 | 19 | MAXIMUM DAILY AMOUNT | 7,500 | 20 | ANNUAL WASTE AMOUNT | 200 | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|-------|----|---------------------|-----|----|------------------|----|

| | | | | | | | | | |
|-------|--|--|----|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
| | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | | | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|----------|
| 15-20 | Calcium carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 1-5 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

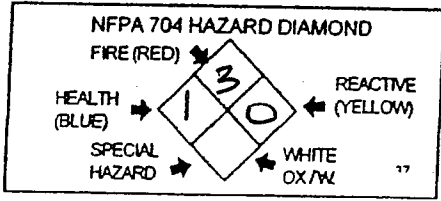
PLACARDING INFORMATION

UNDOT # UN 1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (ATA/CFR49) 3.3 (IMO) 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 350 Class C Base

MSDS No: 33503-07
Effective: 01/26/09
Supercedes: 07/27/05
Page: 1 of 5

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-350 Class C Base
Generic Description: Polysulfide sealant
Product Use: Aircraft Sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 1* | 1 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Calcium carbonate

Toluene

Non-hazardous and other ingredients below reportable levels

CAS

471-34-1

108-88-3

Proprietary

Approximate % (w/w)

15 - 20

1 - 5

Balance

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE MODERATE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause moderate irritation. May cause corneal opacity (clouding of the eye surface). Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Nervous system. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Toluene | No | No | No | No |
| Calcium Carbonate | No | No | No | No |



Material Safety Data Sheet AC-[®] 350 Class C Base

MSDS No: 33503-07
Effective: 01/26/09
Supercedes: 07/27/05
Page: 2 of 5

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point.....: 84°F (29°C)
Explosive Lmts.: LEL(%) Not Applicable
Autoignition.....: Not Applicable

Method.....: Setaflash Closed Cup
UEL(%) Not Applicable

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of nitrogen. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.



Material Safety Data Sheet

AC-[®] 350 Class C Base

MSDS No: 33503-07
Effective: 01/26/09
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Page: 3 of 5

7. HANDLING AND STORAGE

Storage Temperature < 120F 48.8C

STORAGE CONDITIONS: Store in cool, dry, well-ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.

TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | |
|-------------------|---------------------------------|
| Toluene | 50 ppm - Skin |
| Calcium carbonate | 10 mg/M ³ Total dust |

OSHA - PEL

| | |
|-------------------|--------------------------------|
| Toluene | 100 ppm |
| Calcium carbonate | 5 mg/M ³ Resp. dust |

OSHA - STEL

| | |
|---------|---------|
| Toluene | 150 ppm |
|---------|---------|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate, impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------|------------------------|--------------------------|------------------------|
| Appearance: | White | Odor: | Mercaptan |
| Physical State: | Paste | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density.: | Not Applicable | Evaporation Rate: | Not Applicable |
| VOC Material: | 61 g/l (0.51 lbs./gal) | VOC Coating (Rule 1124): | 61 g/l (0.51 lbs./gal) |
| Specific Gravity: | 1.31 | %Non-Volatile (w/w): | 95 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases. Hydrofluoric acid.



Material Safety Data Sheet

AC-[®] 350 Class C Base

MSDS No: 33503-07
Effective: 01/26/09
Supercedes: 07/27/05
Page: 4 of 5

11. TOXICITY INFORMATION

COMPONENTS:

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with all local, state, and federal regulations.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
|--------------|----------------|--------|------|-----|
| | Resin solution | Y | Y | Y |

DOT Label: Flammable Liquid

Hazard Class: 3 (IATA/49CFR) 3.3 (IMO)

Packaging Group: III

UN/NA Id Num....: UN 1866

USPS Mailability No

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- N - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat
Formaldehyde.

SARA Section 313 Toxic Chemicals
Toluene
Formaldehyde.



Material Safety Data Sheet

AC-® 350 Class C Base

MSDS No: 33503-07
Effective: 01/26/09
Supersedes: 07/27/05
Page: 5 of 5

TSCA Section 8(d) Data Reporting Rule
Toluene

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|-------------|---------|
| Toluene | 108-88-3 | 1 - 5 |
| Calcium carbonate | 471-34-1 | 15 - 20 |
| Environmental and Special Hazard. | | |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|----------------------|----------|---------|
| Toluene | 108-88-3 | 1 - 5 |
| Reproductive Hazard. | | |
| Formaldehyde | 50-00-0 | * Trace |
| Cancer Hazard. | | |

* Trace = Present at less than 0.01 percent.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 2 Class D Division 2 Sub-division B

CEPA - NPRI -Toluene.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

FACILITY ID# 3 0 0 3 5 38 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.** 3

I. FACILITY INFORMATION

CHEMICAL LOCATION **MATERIAL STORAGE AREA** 4
CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # **1** 6 GRID # **G2 → G7** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **Polysulfide Sealant** WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME **AC-350 CLASS A Base** 9 An EHS Chemical Yes No 12
CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **80** 19 MAXIMUM DAILY AMOUNT **7,500** 20 ANNUAL WASTE AMOUNT **500** 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **50 Gallon Drum** 25
 c. POUNDS d. TONS
*If EHS amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP. t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|----------|---|---|--------------|
| 10-15 29 | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 471-3A-1 32 |
| 5-10 29 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 108-88-3 32 |
| 1-5 29 | Methyl Ethyl Ketone | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 78-93-3 32 |
| 1-5 29 | Titanium dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 13463-677 32 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

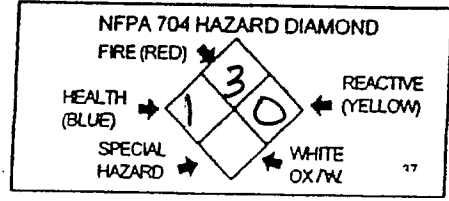
PLACARDING INFORMATION

UNDOT # **UN1866** 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS **3(IATA/FR49)3.3(INV)**
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®]350 Class A Base

MSDS No: 33501-05
Effective: 01/26/09
Supersedes: 01/29/08
Page: 1 of 7

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-350 Class A Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 1 | 1 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Calcium carbonate
Toluene
Methyl Ethyl Ketone
Titanium dioxide
Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 471-34-1 | 10 - 15 |
| 108-88-3 | 5 - 10 |
| 78 - 93 - 3 | 1 - 5 |
| 13463-67-7 | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Inhalation can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---------------------|-------|------|-----|------|
| Titanium Dioxide | No | No | No | No |
| Toluene | No | No | No | No |
| Methyl Ethyl Ketone | No | No | No | No |
| Calcium carbonate | No | No | No | No |



Material Safety Data Sheet AC-® 350 Class A Base

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point: 48°F (9°C)
Explosive Limits: LEL(%) Not Determined
Autoignition: Not Determined

Method: Setflash Closed Cup
UEL(%) Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

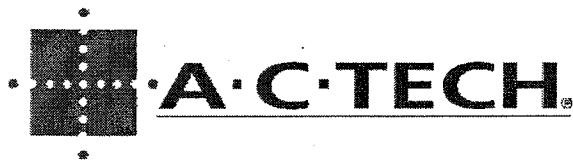
CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Methyl Ethyl Ketone
Toluene

RQ = 5000 LB
RQ = 1000 lb



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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|---------------------|-----|------------------------------|
| Titanium Dioxide | 10 | mg/M ³ |
| Toluene | 50 | ppm - Skin |
| Methyl ethyl ketone | 200 | ppm |
| Calcium carbonate | 10 | mg/M ³ Total dust |

ACGIH - STEL

| | | |
|---------------------|-----|-----|
| Methyl ethyl ketone | 300 | ppm |
|---------------------|-----|-----|

OSHA - PEL

| | | |
|---------------------|-----|------------------------------|
| Titanium Dioxide | 10 | mg/M ³ |
| Toluene | 100 | ppm |
| Methyl ethyl ketone | 200 | ppm |
| Calcium carbonate | 5 | mg/M ³ Resp. dust |

OSHA - STEL

| | | |
|---------------------|-----|-----|
| Methyl ethyl ketone | 300 | ppm |
| Toluene | 150 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134. Organic vapor/mist respirator.



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9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------|------------------------|-------------------|-----------------|
| Appearance.....: | White paste | Odor.....: | Ketone |
| Physical State.....: | Liquid | Solubility.....: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density: | Heavier than air | Evaporation Rate: | Not Established |
| VOC Material: | 149 g/l (1.25 lbs/gal) | Specific Gravity: | 1.27 |
| %Non-Vol(w/w): | 88% | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors were observed at 250-mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Methyl ethyl ketone:

| | | | |
|-----------------|--------|--------|-------------------|
| Oral LD50 | Rat | 2,737 | mg/kg |
| | Mouse | 4,050 | mg/kg |
| Dermal LD50 | Rabbit | 6,480 | mg/kg |
| Inhalation LC50 | Mouse | 40,000 | ppm/2 - Hours |
| | Rat | 23,500 | mg/M3 - 8 - hours |

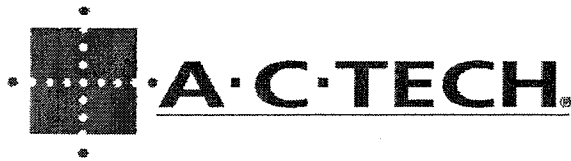
12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



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13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

Table with 5 columns: Weight (lb.), Shipping Name, 49 CFR, IATA, IMO. Includes DOT Label (Flammable Liquid), Hazard Class (3), UN/NA Id Num. (UN 1866), and Packing Group (III).

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
N - Sudden Release of Pressure Hazard
N - Reactivity Hazard
Y - Immediate (acute) Health Hazard
Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals - Methyl Ethyl Ketone

TSCA Section 8(d) Data Reporting Rule - Methyl ethyl ketone

TSCA Section 12(b) Export Notification None

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

Table listing state right-to-know information for Pennsylvania - New Jersey R-T-K, including Methyl ethyl ketone, Toluene, Titanium Dioxide, Calcium carbonate, and Non-hazardous trade secret ingredient(s).



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California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Quartz (crystalline silica) 14808-60-7 < 0.01
Cancer Hazard.

Formaldehyde 50-00-0 Trace *
Cancer Hazard.

* Trace = present at less than 0.01 percent.

CONEG - No data available.

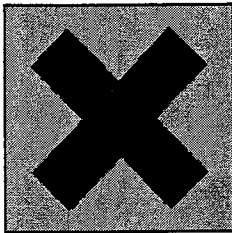
European Union:

Preparation classification:

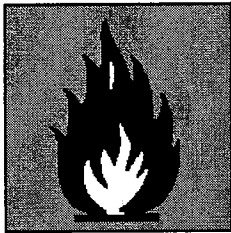
Xn

F

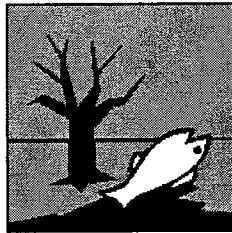
N



Harmful



Highly Flammable



Dangerous for Environment

Contains:

601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- R 11 Highly flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 63 Possible risk of harm to the unborn child.
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - no smoking.
- S 25 Avoid contact with eyes.
- S 36/37 Wear suitable protective clothing and gloves.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Class B Division 3

Class D Division 2 Sub-division B

CEPA - NPRI - No regulated ingredients.



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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|-------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | MAP # | 1 |
| GRID # | G2 → G7 | | |

II. CHEMICAL INFORMATION

| | | | | | | |
|---------------|---|--|--|---|-----------------|---|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| COMMON NAME | AC-250 Class B Base | | * If EPCRA see instructions | | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| CAS # | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | * If EHS is "Yes", all amounts must be LBS | | | |

| | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|-------------|---|--------|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | CURIES |
|----------------------------|----------------------------------|--|-----------------------------------|-------------|---|--------|

| | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|-----------------------|---|---|--|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE |
| | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | |

| | | | | | | |
|----------------------|---|----------------------|------|---------------------|-----|------------------|
| AVERAGE DAILY AMOUNT | 7 | MAXIMUM DAILY AMOUNT | 2500 | ANNUAL WASTE AMOUNT | 150 | STATE WASTE CODE |
|----------------------|---|----------------------|------|---------------------|-----|------------------|

| | | | | | | | | |
|-------|--|--|------------------------------------|----------------------------------|--------------|----------|-------------------|----------------|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | DAYS ON SITE | 365 DAYS | LARGEST CONTAINER | 50 Gallon Drum |
|-------|--|--|------------------------------------|----------------------------------|--------------|----------|-------------------|----------------|

| | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP. | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|

| | | | |
|------------------|--|---|---|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT |
|------------------|--|---|---|

| | | | | |
|---------------------|--|---|---|---------------------------------------|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC |
|---------------------|--|---|---|---------------------------------------|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 20-25 | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 1-5 | Ethyl acetate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 141-78-6 |
| 1-5 | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-7 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

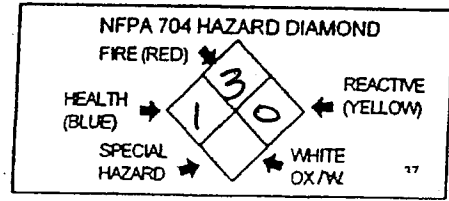
PLACARDING INFORMATION

UNDOT # UN1806 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3(IATA/CFR49)33(Inv)
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 250 Class B -1/6 Base

MSDS No: 32502-09
Effective: 01/26/09
Supersedes: 08/29/08
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SIN #834-100
AMS-S-83318

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-250 Class B Base
Generic Description: Polysulfide Sealant
Product Use: Accelerator

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|-------------|------|
| | HMIS | NFPA |
| Health | 1* | 1 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| | * = Chronic | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMMON NAME | CAS # | Approximate % (w/w) |
|---|-------------|---------------------|
| Calcium carbonate | 471-34-1 | 20 - 25 |
| Ethyl acetate | 141-78-6 | 1 - 5 |
| Titanium Dioxide | 13463-67-7 | 1 - 5 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. May cause corneal opacity (clouding of the eye surface).

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Blood and/or blood-forming organs. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Blood and/or blood-forming organs. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Calcium carbonate | No | No | No | No |
| Ethyl acetate | No | No | No | No |
| Titanium Dioxide | No | No | No | No |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|------------------------|---------|-----------------|
| Flash Point: | 45°F (7.2°C) | Method: | Seta |
| Explosive Limits: | LEL(%) Not Established | UEL(%) | Not Established |
| Autoignition: | Not Established | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide. Low molecular weight hydrocarbons.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Ethyl acetate RQ = 5000 LB



Material Safety Data Sheet AC-[®] 250 Class B -1/6 Base

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7. HANDLING AND STORAGE

Storage Temperature < 100F 38.8C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.

TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|-----|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Ethyl acetate | 400 | ppm |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - PEL

| | | |
|-------------------|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Ethyl acetate | 400 | ppm |
| Titanium Dioxide | 10 | mg/M ³ |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear rubber boots and apron, protective clothing, and impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------|---------------------|-------------------|-----------------|
| Appearance: | White | Odor: | Ester |
| Physical State: | Paste | Solubility: | Insoluble |
| pH.....: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density: | Not Established | Evaporation Rate: | Not Established |
| VOC Material: | 68 g/L 0.58 lbs/gal | %Non-Vol(w/w): | 96 |
| Specific Grvty: | 1.60 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-[®] 250 Class B -1/6 Base

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Ethyl acetate:

Ingestion or inhalation can cause CNS depression, kidney, liver and spleen damage, and anemia. Positive results were obtained in the yeast cell assay and in hamster fibroblasts.

| | | | |
|-----------------|--------|-------|---------------------------|
| Oral LD50 | Rat | 5,620 | mg/kg |
| | Mouse | 4,100 | mg/kg |
| | Rabbit | 4,935 | mg/kg |
| Inhalation LC50 | Rat | 1,600 | ppm/8-Hours |
| | Mouse | 45 | g/M ³ /2-Hours |

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors was observed at 250-mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with all local, state, and federal regulations.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



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AC-[®] 250 Class B -1/6 Base

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14. TRANSPORT INFORMATION

| | | | | |
|-----------------|---------------------------|-------------------|---------|-----|
| Weight (lb) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin Solution, Flammable | Y | Y | Y |
| DOT Label: | Flammable liquid | UN/NA Id Num: | UN 1866 | |
| Hazard Class: | 3 (IATA/49CFR) 3.3 (IMO) | USPS Mailability: | No | |
| Packing Group*: | III | | | |

*IATA section 3.3.3 viscous substances

15. REGULATORY INFORMATION

FEDERAL:
This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:
Y - Fire Hazard
N - Sudden Release of Pressure Hazard
N - Reactivity Hazard
Y - Immediate (acute) Health Hazard
Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals - No regulated ingredients.

TSCA Section 12(b) Export Notification
Ethyl acetate

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

| | | |
|---|-------------|---------|
| Pennsylvania - New Jersey R-T-K | | |
| Calcium carbonate | 471-34-1 | 20 - 25 |
| Ethyl acetate | 141-78-6 | 1 - 5 |
| Environmental Hazard. | | |
| Titanium Dioxide | 13463-67-7 | 1 - 5 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.
Quartz (crystalline silica) 14808-60-7 < 0.01
Cancer Hazard.

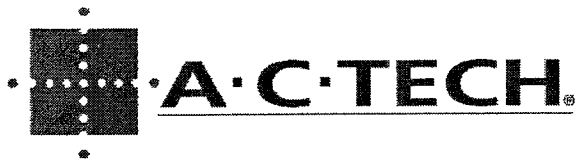
* Trace = present at less than 0.01 percent.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 3 Class D Division 2 Sub-division B

CEPA - NPRI - No regulated ingredients.



Material Safety Data Sheet AC-[®] 250 Class B -1/6 Base

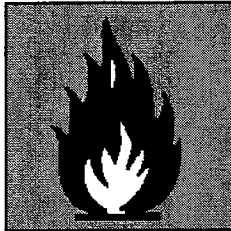
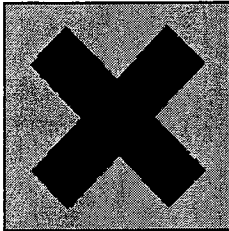
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European Union:

Preparation classification:

Harmful

Highly Flammable



Contains:

607-022-00-5 Ethyl Acetate

Particular hazards associated with the preparation and safety recommendations:

- R 52/53 Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.
- R 11 Highly flammable
- R 63 Possible risk of harm to the unborn child
- R66 Repeated exposure may cause skin dryness or cracking
- R67 Vapors may cause drowsiness and dizziness
- S 36/37 Wear suitable protective clothing and gloves.
- S 16 Keep away from sources of ignition - no smoking.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
- S 9 Keep container in a well-ventilated place.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|-------------------------|---|-----------------------------|--|---|--|---|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | AC-250 Class A 1/6 Base | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | | * If EHS is "Yes", all amounts must be LBS | | |

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--------------------------------------|--|----|---|---|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--------------------------------------|--|----|---|---|

| | | | | | | | | | | |
|----------------------|----|----|----------------------|------|----|---------------------|-----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 10 | 19 | MAXIMUM DAILY AMOUNT | 2500 | 20 | ANNUAL WASTE AMOUNT | 150 | 21 | STATE WASTE CODE | 22 |
|----------------------|----|----|----------------------|------|----|---------------------|-----|----|------------------|----|

| | | | | | | | | | | | |
|-------|--|--|------------------------------------|----------------------------------|----|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
|-------|--|--|------------------------------------|----------------------------------|----|--------------|----------|----|-------------------|----------------|----|

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP. | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|---|--|--------------------------------------|--------------------------------------|-----------------------------------|----|

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 10-20 | Limestone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1317-65-3 |
| 1-5 | Calcium carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 5-10 | Ethyl acetate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 141-78-6 |
| 1-5 | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-1 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

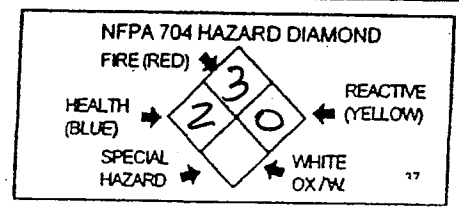
PLACARDING INFORMATION

UNDOT # UN1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (IATA (CFR49) 3.3 (MD))
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 250 Class A-1/6 Base

MSDS No: 32501-08
Effective: 01/26/09
Supersedes: 03/10/08
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-250 Class A-1/6 Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMMON NAME | CAS # | Approximate % (w/w) |
|---|-------------|---------------------|
| Limestone | 1317-65-3 | 10 - 20 |
| Calcium carbonate | 471-34-1 | 1 - 5 |
| Ethyl acetate | 141-78-6 | 5 - 10 |
| Titanium Dioxide | 13463-67-7 | 1 - 5 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: COMBUSTIBLE LIQUID AND VAPOR (FLAMMABLE IF SHIPPED BY AIR/VESSEL). INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

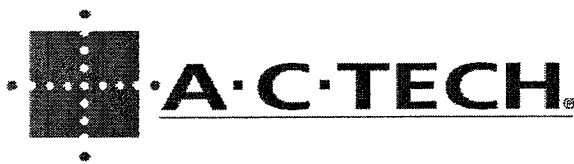
INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Limestone | No | No | No | No |
| Calcium carbonate | No | No | No | No |
| Ethyl acetate | No | No | No | No |
| Titanium Dioxide | No | No | No | No |



Material Safety Data Sheet AC-[®] 250 Class A-1/6 Base

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point: 45°F (7.2°C)
Explosive Limits: LEL(%) Not Determined
Autoignition: Not Determined

Method: Setaflash Closed Cup
UEL(%) Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Ethyl acetate

RQ = 5000 LB



Material Safety Data Sheet AC-[®] 250 Class A-1/6 Base

MSDS No: 32501-08
Effective: 01/26/09
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7. HANDLING AND STORAGE

Storage Temperature < 100°F 38°C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, then open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container is hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|-----|------------------------------|
| Limestone | 10 | mg/M ³ Total dust |
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Ethyl acetate | 400 | ppm |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - PEL

| | | |
|-------------------|-----|------------------------------|
| Limestone | 5 | mg/M ³ Resp. dust |
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Ethyl acetate | 400 | ppm |
| Titanium Dioxide | 10 | mg/M ³ |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate, impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134. Organic vapor/mist respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------|----------------------|-------------------|-----------------|
| Appearance: | White | Odor: | Acetate |
| Physical State: | Liquid | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density: | Not Established | Evaporation Rate: | Not Established |
| VOC Material: | 42 g/l (0.35 lb/gal) | Specific Gravity: | 1.51 |
| %Non-Vol. (w/w): | Approximately 95 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-® 250 Class A-1/6 Base

MSDS No: 32501-08
Effective: 01/26/09
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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Ethyl acetate:

Ingestion or inhalation can cause CNS depression, kidney, liver and spleen damage, and anemia. Positive results were obtained in the yeast cell assay and in hamster fibroblasts.

| | | | |
|-----------------|--------|-------|--------------|
| Oral LD50 | Rat | 5,620 | mg/kg |
| | Mouse | 4,100 | mg/kg |
| | Rabbit | 4,935 | mg/kg |
| Inhalation LC50 | Rat | 1,600 | ppm/8-Hours |
| | Mouse | 45 | g/M3/2-Hours |

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors was observed at 250 mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



Material Safety Data Sheet AC-[®] 250 Class A-1/6 Base

MSDS No: 32501-08
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14. TRANSPORT INFORMATION

| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
|--------------------|---------------------------|-------------------|---------|-----|
| | Resin solution, Flammable | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num...: | UN 1866 | |
| Hazard Class.....: | 3 (IATA/49CFR) 3.3 (IMO) | USPS Mailability: | No | |
| Packing Group...: | II | | | |

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids). For domestic shipments only under 49CFR above (transportation by vessel or aircraft is not permitted): Only regulated as a combustible liquid when packaged in containers of 119 gallons or more and does not meet the definition of any other hazard class. When less than 119 gallons are shipped domestically by ground transport (49CFR above), the following transportation information applies: DOT shipping name: Non-regulated; DOT label: Not-regulated; DOT ID No.: Not-regulated; Precautionary Label: ND.

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals - No regulated ingredients.

TSCA Section 12(b) Export Notification
Ethyl acetate

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act

Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|----------------|---------|
| Limestone | 1317 - 65 - 3 | 10 - 20 |
| Calcium carbonate | 471 - 34 - 1 | 10 - 20 |
| Ethyl acetate | 141 - 78 - 6 | 5 - 10 |
| Environmental Hazard. | | |
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Quartz (crystalline silica) 14808-60- < 0.01

Cancer Hazard.

* Trace = present at less than 0.01 percent.

CONEG - No data available.



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CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 2
Class D Division 2 Sub-division B

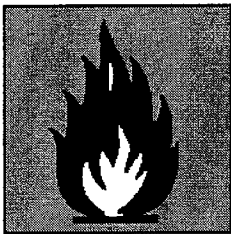
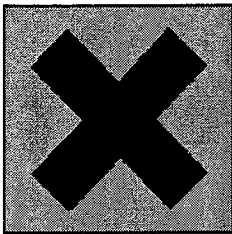
CEPA - NPRI - No regulated ingredients.

European Union:

Preparation classification:

Xn

F+



Harmful

Highly Flammable

Contains:

607-022-00-5 Ethyl Acetate

Particular hazards associated with the preparation and safety recommendations:

- R 52/53 Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.
- R 11 Highly flammable
- R 63 Possible risk of harm to the unborn child
- R66 Repeated exposure may cause skin dryness or cracking
- R67 Vapors may cause drowsiness and dizziness
- S 36/37 Wear suitable protective clothing and gloves.
- S 16 Keep away from sources of ignition - no smoking.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
- S 9 Keep container in a well-ventilated place.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | |
|-------------------|-----------------------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | 4 |
|-------------------|-----------------------|---|

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |
|-----------------------------|---|---|-------|---|---|--------|---------|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|----------------------|-------|--|---|--------------|---|----|
| CHEMICAL NAME | Poly sulfide Sealant | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|----------------------|-------|--|---|--------------|---|----|

| | | | | | |
|-------------|---------------------|---|-----------------|---|----|
| COMMON NAME | AC-240 Class A Base | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
|-------------|---------------------|---|-----------------|---|----|

| | | | |
|-------|----|---|----|
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 |
|-------|----|---|----|

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--------------------------------------|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--------------------------------------|--|----|

| | | | | | | | | | | |
|----------------------|----|----|----------------------|-----|----|---------------------|----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 20 | 19 | MAXIMUM DAILY AMOUNT | 500 | 20 | ANNUAL WASTE AMOUNT | 20 | 21 | STATE WASTE CODE | 22 |
|----------------------|----|----|----------------------|-----|----|---------------------|----|----|------------------|----|

| | | | | | | | | | | | |
|-------|-------------------------------------|--|----|---|----------------------------------|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
|-------|-------------------------------------|--|----|---|----------------------------------|--------------|----------|----|-------------------|----------------|----|

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 20-25 | Limestone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1317-65-3 |
| 10-15 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 5-10 | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 1-5 | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-1 |
| 1-5 | Glycidoxypropyltrimethylsilane | <input type="checkbox"/> Yes <input type="checkbox"/> No | 2530-83-8 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # UN 1866 33

Refer to shipping papers or MSDS

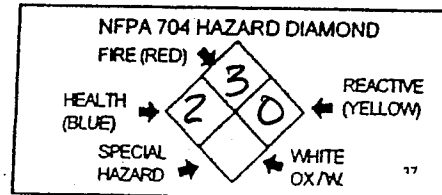
DOT HAZARD CLASS 3 (ATA CFR 49) 3.3 (IMO)

Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36

If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 240 Class A Base

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Effective: 01/26/09
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SIN #834-100
AMS-S-8802

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-240 Class A Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|-------------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| | * = Chronic | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMMON NAME | CAS # | Approximate % (w/w) |
|---|-------------|---------------------|
| Limestone | 1317-65-3 | 20 – 25 |
| Toluene | 108-88-3 | 10 – 15 |
| Calcium carbonate | 471-34-1 | 5 – 10 |
| Titanium Dioxide | 13463-67-7 | 1 – 5 |
| Glycidoxypropyltrimethoxysilane | 2530-83-8 | 1 – 5 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause slight to mild irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---------------------------------|-------|------|-----|------|
| Limestone | No | No | No | No |
| Toluene | No | No | No | No |
| Calcium Carbonate | No | No | No | No |
| Titanium Dioxide | No | No | No | No |
| Glycidoxypropyltrimethoxysilane | No | No | No | No |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|------------------------|---------|----------------------|
| Flash Point: | 41°F (4°C) | Method: | Setaflash Closed Cup |
| Explosive Limits: | LEL (%) Not Determined | UEL (%) | Not Determined |
| Autoignition: | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

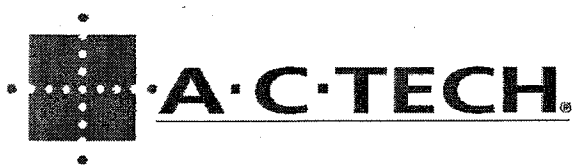
CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a components' RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



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7. HANDLING AND STORAGE

Storage Temperature < 100°F 37°C

STORAGE CONDITIONS: Store in cool, dry, well-ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|----|------------------------------|
| Limestone | 10 | mg/M ³ Total dust |
| Toluene | 50 | ppm |
| Calcium Carbonate | 10 | mg/M ³ |
| Titanium Dioxide | 10 | mg/M ³ |

Manufacturer's PEL/TLV

| | | |
|---------------------------------|---|-----|
| Glycidoxypropyltrimethoxysilane | 5 | ppm |
|---------------------------------|---|-----|

Manufacturer's STEL

| | | |
|---------------------------------|----|-----|
| Glycidoxypropyltrimethoxysilane | 10 | ppm |
|---------------------------------|----|-----|

OSHA - PEL

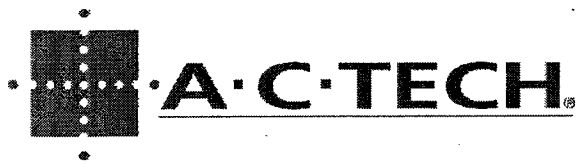
| | | |
|-------------------|-----|------------------------------|
| Limestone | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |
| Calcium Carbonate | 5 | mg/M ³ Resp. dust |
| Titanium Dioxide | 10 | mg/M ³ |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate, impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134. Organic vapor/mist respirator.



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9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------|--------------------------------------|-------------------|-----------------|
| Appearance: | White | Odor: | Mercaptan |
| Physical State: | Liquid | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density: | Not Established | Evaporation Rate: | Not Established |
| VOC Material: | Approximately 168 g/L (1.13 lbs/gal) | Specific Gravity: | 1.43 |
| %Non-Vol(w/w): | Approximately 87 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Toluene:

| | | |
|-----------------|--------|-------------------|
| Oral LD50 | Rat | 5,000 mg/kg |
| Dermal LD50 | Rabbit | 12,124 mg/kg |
| Inhalation LC50 | Mouse | 5,320 ppm/8-hours |

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors was observed at 250 mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

Glycidoxypropyltrimethoxysilane:

Eye, skin, and respiratory tract irritant. Positive results were obtained in the Ames test. Positive results were obtained in the mouse lymphoma assay.

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



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 Supersedes: 03/13/08
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14. TRANSPORT INFORMATION

| | | | | |
|------------------|--------------------------|------------------------|------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin solution | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num.: UN 1866 | | |
| Hazard Class...: | 3 (IATA/49CFR) 3.3 (IMO) | | | |
| Packing Group.: | II | | | |

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids). For domestic shipments only under 49CFR above (transportation by vessel or aircraft is not permitted): Only regulated as a combustible liquid when packaged in containers of 119 gallons or more and does not meet the definition of any other hazard class. When less than 119 gallons are shipped domestically by ground transport (49CFR above), the following transportation information applies: DOT shipping name: Non-regulated; DOT label: Not-regulated; DOT ID No.: Not-regulated; Precautionary Label: ND.

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals -Toluene

TSCA Section 12(b) Export Notification
 Toluene

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
 Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|-----------------------|---------|
| Limestone | 1317-65-3 | 20 - 25 |
| Toluene | 108-88-3 | 10 - 15 |
| | Environmental Hazard. | |
| Titanium Dioxide | 13463-67-7 | 1 - 5 |
| Glycidoxypropyltrimethoxysilane | 2530-83-8 | 1 - 5 |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

| | | |
|--|------------|---------|
| WARNING: This product contains a chemical(s) known to the State of California to cause cancer. | | |
| Toluene | 108-88-3 | 10 - 15 |
| Reproductive Hazard | | |
| Quartz (crystalline silica) | 14808-60-7 | < 0.01* |
| Cancer Hazard. | | |
| Formaldehyde | 50-00-0 | Trace * |
| Cancer Hazard. | | |

* Trace = present at less than 0.01 percent.

CONEG - No data available.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|--------|-------|---|
| CHEMICAL LOCATION | Class I Room | | | 4 |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 |
| | 6 | GRID # | IZ | |

II. CHEMICAL INFORMATION

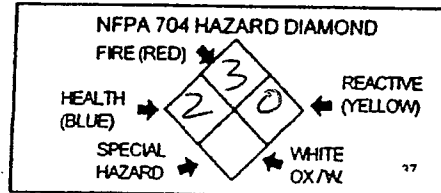
| | | | | | | | |
|--|---|--|--|--|--|---|----|
| CHEMICAL NAME | AC-137 Clear Adhesion Prom. | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 11 |
| COMMON NAME | SAME | 9 | | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | |
| | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | | |
| AVERAGE DAILY AMOUNT | 0.1 | 19 | MAXIMUM DAILY AMOUNT | 10 | 20 | ANNUAL WASTE AMOUNT | 1 |
| | | | | | | STATE WASTE CODE | 22 |
| UNITS | <input checked="" type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | |
| | | | | | | Gallons | |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input checked="" type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 | |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 | | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|--------------|
| 1 | 70-90 ETHANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 64-17-5 |
| 2 | 5-15 TITANATE ESTER | <input type="checkbox"/> Yes <input type="checkbox"/> No | TRADE SECRET |
| 3 | 1-5 METHYL ALCOHOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-56-1 |
| 4 | 1-5 ISOPROPYL ALCOHOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-63-0 |
| 5 | balance TRADE SECRET | <input type="checkbox"/> Yes <input type="checkbox"/> No | N.A. |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

| | | |
|------------------|--|----|
| UNDOT # | UN1170 | 33 |
| | Refer to shipping papers or MSDS | |
| DOT HAZARD CLASS | 3 | 34 |
| | Refer to shipping papers or MSDS | |
| EPCRA | <input type="checkbox"/> YES <input type="checkbox"/> NO | 35 |
| X | _____ | 36 |
| | If EPCRA, Please Sign Here | |



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet

AC-[®] 137 Clear, Adhesion Promoter

MSDS No: 11372-03
Effective: 01/26/09
Supercedes: 02/27/08
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-137 Clear Adhesion promoter
Generic Description: Titanate mixture
Product Use: Adhesion promoter

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Ethanol
Titanate ester
Methyl Alcohol
Isopropyl Alcohol
Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 64 - 17 - 5 | 70 - 90 |
| Proprietary | 5 - 15 |
| 67 - 56 - 1 | 1 - 5 |
| 67 - 63 - 0 | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. CAUSES SEVERE EYE IRRITATION. CAUSES SEVERE SKIN IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation.

SKIN CONTACT: Causes severe irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness headaches, and loss of coordination.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach.

TARGET ORGANS/CHRONIC EFFECTS: Eyes. Skin. Heart, Central Nervous System, Liver.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|---------|-----|------|
| Ethanol | No | No | No | No |
| Titanate ester | No | No | No | No |
| Methyl alcohol | No | No | No | No |
| Isopropyl Alcohol | No | Group 3 | No | No |



Material Safety Data Sheet

AC-[®] 137 Clear, Adhesion Promoter

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get prompt medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get prompt medical attention. Professionally wash clothing before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point: 55°F (13°C)
Explosive Limits: LEL(%) 3.3 UEL(%) 19
Autoignition: 685°F

Method: Tag Closed Cup

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations. No regulated ingredients.



Material Safety Data Sheet

AC-® 137 Clear, Adhesion Promoter

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7. HANDLING AND STORAGE

Storage Temperature < 100°F (38.8°C)

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non - sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles, face shield, and gloves. Professionally launder contaminated clothing before re - use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

ACGIH - STEL

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

OSHA - PEL

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

OSHA - STEL

| | | |
|-------------------|------|-----|
| Ethanol | 1000 | ppm |
| Methyl Alcohol | 200 | ppm |
| Isopropyl Alcohol | 400 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA - approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self - contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.



Material Safety Data Sheet

AC-[®] 137 Clear, Adhesion Promoter

MSDS No: 11372-03
Effective: 01/26/09
Supersedes: 02/27/08
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9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|--------------------|-----------------|---------------------|-----------------|
| Appearance.....: | Clear | Odor.....: | Strong |
| Physical State...: | Liquid | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | Boiling Point.....: | Not Established |
| Vapor Pressure..: | Not Established | Vapor Density.....: | Approximately 5 |
| Evaporation Rt.: | Not Established | VOC Material.....: | 719 g/l |
| Specific Gravity.: | 0.81 | % Non - Vol(w/w)..: | 89% |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers.

11. TOXICITY INFORMATION

COMPONENTS:

Titanate ester:

| | | | |
|-----------------|--------|--------|----------------|
| Oral LD50 | Rat | 11,000 | mg/kg |
| Dermal LD50 | Rabbit | > 16 | ml/Kg |
| Inhalation LC50 | Rat | 7.78 | mg/L/4 - hours |

Methyl Alcohol

| | | | |
|-----------------|-----|--------|-------|
| Oral LD50 | Rat | 5,628 | mg/kg |
| Inhalation LC50 | Rat | 64,000 | ppm |

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|---------------------|--------------------------|----------------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IAYA | IMO |
| | ETHANOL SOLUTIONS | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num....: | UN 1170 | |
| Hazard Class.....: | 3 (IATA/49CFR) 3.2 (IMO) | USPS Mailability...: | No | |
| Packing Group.....: | II | | | |



Material Safety Data Sheet AC-[®] 137 Clear, Adhesion Promoter

MSDS No: 11372-03
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15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302
(TPQ) - No regulated ingredients.

SARA Section 313 Toxic Chemicals - No regulated ingredients.

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical
Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

| | | |
|--|-------------|---------|
| Pennsylvania - New Jersey R - T - K | | |
| Reagent Alcohol | 64 - 17 - 5 | 70 - 90 |
| Titanate ester | Proprietary | 5 - 10 |
| Methyl Alcohol | 67 - 56 - 1 | 1 - 5 |
| Isopropyl Alcohol | 67 - 63 - 0 | 1 - 5 |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65 - This product contains Reagent alcohol, a chemical known to the state of California to cause birth defects or other reproductive harm.

New Jersey Trade Secret Registry Number: 346515 - 5227P

| | | |
|-------------------|-------------|---------|
| Florida - | | |
| Reagent Alcohol | 64 - 17 - 5 | 70 - 90 |
| Methyl Alcohol | 67 - 56 - 1 | 1 - 5 |
| Isopropyl Alcohol | 67 - 63 - 0 | 1 - 5 |

CONEG - No data available.

CANADA: WHMIS - B2, D2B

CEPA - NPRI - No regulated ingredients.

Canadian Chemical Inventory

Domestic Substance List



Material Safety Data Sheet
AC-[®] 137 Clear, Adhesion
Promoter

MSDS No: 11372-03
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Listed - NDSL.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-----------|------------------|---------------------------------------|---|
| FACILITY ID# | 3 0 0 3 5 | 38 BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-----------|------------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|----------|-----|---|
| CHEMICAL LOCATION | Class I Room | | | 4 |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP # | 1 | 6 |
| | | 7 GRID # | I 2 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|--------------------------|---|--|----|---|---|----|
| CHEMICAL NAME | AC-135 Adhesion Promoter | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 11 |
| COMMON NAME | SAME | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | * If EPCRA see instructions * If EHS is "Yes", all amounts must be LBS | | |

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|--|-----------------------------------|----|-----------------------|---|---|--|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | | |
|----------------------|-------------------------------------|--|---|----------------------------------|----|---------------------|----------|------------------|-------------------|--------|----|
| AVERAGE DAILY AMOUNT | 9 | 19 | MAXIMUM DAILY AMOUNT | 45 | 20 | ANNUAL WASTE AMOUNT | 21 | STATE WASTE CODE | 22 | | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 30 Gal | 25 |

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|---|---|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|--|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input checked="" type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input checked="" type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
|--|--|--|--|--|--|---|---|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|--|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------------------------|---|--|--------------|
| 1 80-90 ²⁹ | PARA-CHLOROBENZOTRIFLUORIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 98-56-6 |
| 2 5-15 ²⁹ | TITANATE ESTER | <input type="checkbox"/> Yes <input type="checkbox"/> No | TRADE SECRET |
| 3 1-5 ²⁹ | ORTHO-CHLOROBENZOTRIFLUORIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 88-16-4 |
| 4 balance ²⁹ | TRADE SECRET | <input type="checkbox"/> Yes <input type="checkbox"/> No | N.A. |
| 5 ²⁹ | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

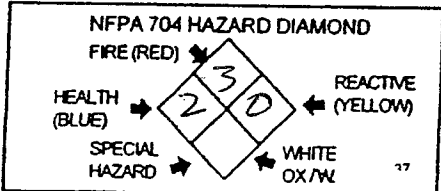
PLACARDING INFORMATION

UNDOT # UN 2234 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet

AC-[®] 135 Adhesion Promoter

MSDS No: 11351-08
Effective: 01/26/09
Supercedes: 08/02/04
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-135 Adhesion promoter
Generic Description: Titanate mixture
Product Use: Adhesion promoter

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 3 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

ChemTrec Emergency
1 - 800 - 424 - 9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Para - chlorobenzotrifluoride
Titanate ester
Ortho - chlorobenzotrifluoride
Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 98 - 56 - 6 | 80 - 90 |
| Proprietary | 5 - 15 |
| 88 - 16 - 4 | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. CAUSES SEVERE EYE IRRITATION. CAUSES SEVERE SKIN IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation.

SKIN CONTACT: Causes severe irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness headaches, and loss of coordination.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach.

TARGET ORGANS/CHRONIC EFFECTS: Eyes. Skin. Heart, Central Nervous System, Liver.

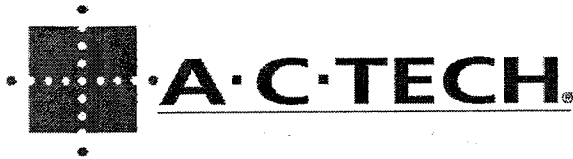
CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|--------------------------------|-------|------|-----|------|
| Para - chlorobenzotrifluoride | No | No | No | No |
| Titanate ester | No | No | No | No |
| Ortho - chlorobenzotrifluoride | No | No | No | No |

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get prompt medical attention.



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SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get prompt medical attention. Professionally wash clothing before re - use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point.....: 77°F (25°C) Method.....: Setaflash Closed Cup
Explosive Lmts.....: LEL(%) Not Established UEL(%) Not Established
Autoignition.....: Not Established

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH - approved positive pressure self - contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN - UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self - contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non - sparking tools and/or explosion - proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 - 800 - 424 - 8802) and to the appropriate state and local emergency response organizations. No regulated ingredients.

7. HANDLING AND STORAGE

Storage Temperature < 120F 48.8C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.



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WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles, face shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV - No regulated ingredients.

Manufacturer's PEL/TLV

Para-chlorobenzotrifluoride
Titanate ester

20 ppm
10 mg / M³ Total dust

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------|-----------------|--------------------|------------------------|
| Appearance.....: | Red | Odor.....: | Strong |
| Physical State....: | Liquid | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | Boiling Point....: | Not Established |
| Vapor Pressure: | Not Established | Vapor Density..: | Approximately 5 |
| Evaporation Rt...: | Not Established | VOC Material...: | 23.5 g/l (0.20 lb/gal) |
| Specific Gravity..: | 1.29 | VOC Coating...: | 146 g/l (1.23 lb/gal) |
| % Non-Vol(w/w)...: | Not Established | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

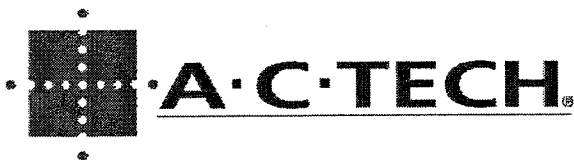
10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers.



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11. TOXICITY INFORMATION

COMPONENTS:

| | | | |
|--------------------------------|--------|---------|----------------|
| Para - chlorobenzotrifluoride: | | | |
| Oral LD50 | Rat | > 6,800 | mg/kg |
| Dermal LD50 | Rabbit | > 2,700 | mg/kg |
| Inhalation LC50 | Rat | 4,479 | ppm/4 - Hours |
| Titanate ester: | | | |
| Oral LD50 | Rat | 11,000 | mg/kg |
| Dermal LD50 | Rabbit | > 16 | ml/kg |
| Inhalation LC50 | Rat | 7.78 | mg/L/4 - hours |

Ortho - chlorobenzotrifluoride: Eye, skin, and respiratory tract irritant.

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------------|----------------------------------|--------|--------------------|---------|
| Weight (lb.) | Shipping Name | 49 CFR | IAYA | IMO |
| | Chlorobenzotrifluorides solution | Y | Y | Y |
| DOT Label..... | Flammable Liquid | | UN/NA Id Num.... | UN 2234 |
| Hazard Class..... | 3 (IATA/49CFR) 3.3 (IMO) | | USPS Mailability.. | No |
| Packing Group..... | III | | | |

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard



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Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302
(TPQ) - No regulated ingredients.

SARA Section 313 Toxic Chemicals - No regulated ingredients.

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical
Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

| | | |
|--|-------------|---------|
| Pennsylvania - New Jersey R - T - K | | |
| Para - chlorobenzotrifluoride | 98 - 56 - 6 | 80 - 90 |
| Titanate ester | Proprietary | 5 - 10 |
| Ortho - chlorobenzotrifluoride | 88 - 16 - 4 | 1 - 5 |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65 - No regulated ingredients.

New Jersey Trade Secret Registry Number: 346515 - 5227P

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Class B Division 2
CAS #628-63-7 is listed on Canada's DSL/NDSL list.

Class D Division 2 Sub - division B

CEPA - NPRI - No regulated ingredients.

Canadian Chemical Inventory

Domestic Substance List
Listed - NDSL.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.



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End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

FACILITY ID# 30035 BUSINESS NAME ADVANCED CHEMISTRY & TECHNOLOGY, INC.

I. FACILITY INFORMATION

CHEMICAL LOCATION CLASS I ROOM

CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # 1 6 GRID # I 2 7

II. CHEMICAL INFORMATION

CHEMICAL NAME METHYL ETHYL KETONE WASTE Yes 8 TRADE SECRET Yes No 11
* If EPCRA see instructions

COMMON NAME MEK 9 An EHS Chemical Yes No 12
* If EHS is "Yes", all amounts must be LBS

CAS # 78-93-3 10 FIRE CODE HAZARD CLASSES (supplied by GGGF) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 200 19 MAXIMUM DAILY AMOUNT 500 20 ANNUAL WASTE AMOUNT NONE 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE 365 DAYS 24 LARGEST CONTAINER 50 GAL DRUM 25
 c. POUNDS d. TONS
* If EHS, amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER _____

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|---|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 30 | 32 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

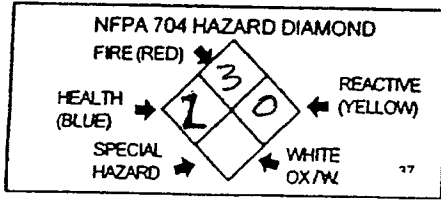
PLACARDING INFORMATION

UNDOT # UN 1193 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : **Methyl Ethyl Ketone**
Uses : Use as a solvent only in industrial manufacturing processes.
Product Code : S2113
Company : **Shell Chemical LP**
 PO Box 2463
 HOUSTON TX 77252-2463
 USA
MSDS Request : 1-800-240-6737
Customer Service : 1-866-897-4355

Emergency Telephone Number
Chemtrec Domestic (24 hr) : 1-800-424-9300
Chemtrec International (24 hr) : 1-703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | Concentration |
|---------------------|---------|---------------|
| Methyl ethyl ketone | 78-93-3 | 100.00 % |

3. HAZARDS IDENTIFICATION

| Emergency Overview | |
|-----------------------------|---|
| Appearance and Odour | : Clear. Liquid. Characteristic. |
| Health Hazards | : Irritating to eyes. Vapours may cause drowsiness and dizziness. Harmful: may cause lung damage if swallowed. |
| Safety Hazards | : Flammable liquid and vapour. Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. |

Health Hazards
Inhalation : Slightly irritating to respiratory system. Vapours may cause drowsiness and dizziness.
Skin Contact : May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking.
Eye Contact : Irritating to eyes.
Ingestion : Harmful: may cause lung damage if swallowed.
Signs and Symptoms : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. Respiratory irritation signs and symptoms may include a temporary burning



sensation of the nose and throat, coughing, and/or difficulty breathing. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.

Aggravated Medical Condition : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Eyes. Respiratory system. Skin.

4. FIRST AID MEASURES

General Information : In general no treatment is necessary, however, obtain medical advice.

Inhalation : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

Skin Contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.

Eye Contact : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

Ingestion : If swallowed, do not induce vomiting; transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Advice to Physician : Causes central nervous system depression. Consult a Poison Control Centre for guidance.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Flash point : -4 °C / 25 °F (Abel)

Explosion / Flammability limits in air : 1.8 - 11.5 %(V)

Auto ignition temperature : 515 °C / 959 °F (ASTM E-659)

Specific Hazards : Carbon monoxide may be evolved if incomplete combustion occurs. The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Extinguishing Media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.

Unsuitable Extinguishing Media : Do not use water in a jet.

Protective Equipment for Firefighters : Wear full protective clothing and self-contained breathing apparatus.

Additional Advice : Keep adjacent containers cool by spraying with water.



6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.
- Clean Up Methods** : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapour may form an explosive mixture with air. U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Centre at (800) 424-8802.

7. HANDLING AND STORAGE

- General Precautions** : Avoid breathing of or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid contact with the skin. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping



- in order to avoid generation of electrostatic discharge (≤ 10 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Handling Temperature: Ambient.
- Storage** : Keep away from aerosols, flammables, oxidizing agents, corrosives and from products harmful or toxic to man or to the environment. Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Storage Temperature: Ambient.
 - Product Transfer** : Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.
 - Recommended Materials** : For container paints, use epoxy paint, zinc silicate paint. For containers, or container linings use mild steel, stainless steel.
 - Unsuitable Materials** : Aluminium. Plastics. Natural, neoprene or nitrile rubbers.
 - Container Advice** : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

| Material | Source | Type | ppm | mg/m3 | Notation |
|---------------------|----------|------|---------|-----------|----------|
| Methyl ethyl ketone | ACGIH | TWA | 200 ppm | | |
| | ACGIH | STEL | 300 ppm | | |
| | OSHA Z1 | PEL | 200 ppm | 590 mg/m3 | |
| | OSHA Z1A | TWA | 200 ppm | 590 mg/m3 | |
| | OSHA Z1A | STEL | 300 ppm | 885 mg/m3 | |

- Additional Information** : Shell has adopted as Interim Standards, the OSHA PELs that were established in 1989 and later rescinded. Wash hands before eating, drinking, smoking and using the toilet.
- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering



- respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)] meeting EN141. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
- Hand Protection** : Longer term protection: Butyl rubber. Polyvinyl alcohol. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
- Eye Protection** : Chemical splash goggles (chemical monogoggles).
- Protective Clothing** : Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of analytical Methods <http://www.cdc.gov/niosh/nmam/nmammenu.html> Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha-slc.gov/dts/sltc/methods/toc.html> Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hsl.gov.uk/search.htm>
- Environmental Exposure Controls** : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Clear. Liquid.
- Odour : Characteristic.
- Boiling point : 79 - 80.5 °C / 174 - 176.9 °F
- Flash point : -4 °C / 25 °F (Abel)
- Explosion / Flammability limits in air : 1.8 - 11.5 %(V)
- Auto-ignition temperature : 515 °C / 959 °F (ASTM E-659)
- Vapour pressure : 9,500 Pa at 20 °C / 68 °F
- Specific gravity : 0.804 - 0.806 at 20 °C / 68 °F
- Water solubility : 250 g/l at 20 °C / 68 °F Miscible.
- Solubility in other solvents : Alcohol(s) Completely miscible.
- Vapour density (air=1) : 2.4 at 20 °C / 68 °F
- Volatile organic carbon content : 100 %
- Evaporation rate (nBuAc=1) : 3.7 (ASTM D 3539, nBuAc=1)



10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | : Stable under normal conditions of use. Reacts with strong oxidising agents. |
| Conditions to Avoid | : Avoid heat, sparks, open flames and other ignition sources. |
| Materials to Avoid | : Strong oxidising agents. |
| Hazardous Decomposition Products | : Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. |

11. TOXICOLOGICAL INFORMATION

| | |
|--|--|
| Basis for Assessment | : Information given is based on product testing. |
| Acute Oral Toxicity | : Low toxicity: LD50 >2000 mg/kg , Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal. |
| Acute Dermal Toxicity | : Low toxicity: LD50 >2000 mg/kg , Rabbit |
| Acute Inhalation Toxicity | : High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death. Low toxicity: LC50>5000 ppm / 1 hours, Rat |
| Skin Irritation | : Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. May cause moderate skin irritation. |
| Eye Irritation | : Irritating to eyes. |
| Respiratory Irritation | : Inhalation of vapours or mists may cause irritation to the respiratory system. |
| Sensitisation | : Not a skin sensitiser. |
| Mutagenicity | : Not mutagenic. |
| Reproductive and Developmental Toxicity | : Causes slight foetotoxicity. Effects were seen at high doses only. |
| Additional Information | : Exposure may enhance the toxicity of other materials. |

12. ECOLOGICAL INFORMATION

| | |
|----------------------------------|--|
| Acute Toxicity | |
| Fish | : Low toxicity: LC/EC/IC50 > 1000 mg/l |
| Aquatic Invertebrates | : Low toxicity: LC/EC/IC50 > 100 mg/l |
| Algae | : Low toxicity: LC/EC/IC50 > 1000 mg/l |
| Microorganisms | : Low toxicity: LC/EC/IC50 > 1000 mg/l |
| Mobility | : Dissolves in water. |
| Persistence/degradability | : Readily biodegradable meeting the 10 day window criterion. Oxidises rapidly by photo-chemical reactions in air. |
| Bioaccumulation | : Not expected to bioaccumulate significantly. |



13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
- Container Disposal** : Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

Identification number UN 1193
 Proper shipping name Methyl ethyl ketone
 Class / Division 3
 Packing group II
 Hazardous subst./material RQ: METHYL ETHYL KETONE/5,000.00 LB
 Emergency Response Guide No. 127

IMDG

Identification number UN 1193
 Proper shipping name METHYL ETHYL KETONE
 Class / Division 3
 Packing group II
 Marine pollutant: No

IATA (Country variations may apply)

Identification number UN 1193
 Proper shipping name Methyl ethyl ketone
 Class / Division 3
 Packing group II

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

AICS Listed.



Shell Chemicals

Material Safety Data Sheet

Methyl Ethyl Ketone

MSDS# 5390

Version 14.3

Effective Date 11/26/2005

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

| | |
|------------|-------------------|
| DSL | Listed. |
| INV (CN) | Listed. |
| ENCS (JP) | Listed. (2)-542 |
| TSCA | Listed. |
| EINECS | Listed. 201-159-0 |
| KECI (KR) | Listed. KE-24094 |
| PICCS (PH) | Listed. |

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

| | |
|-------------------------------|--------------------------------|
| Methyl ethyl ketone (78-93-3) | Reportable quantity: 5,000 lbs |
| Methyl ethyl ketone (78-93-3) | Reportable quantity: 5,000 lbs |

SARA Hazard Categories (311/312)

Immediate (Acute) Health Hazard. Fire Hazard.

State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

New Jersey Right-To-Know Chemical List

Methyl ethyl ketone (78-93-3) 100.00%

Pennsylvania Right-To-Know Chemical List

Methyl ethyl ketone (78-93-3) 100.00% Environmental hazard. Listed.

16. OTHER INFORMATION

| | |
|--|---|
| HMIS Rating (Health, Fire, Reactivity) | : 2, 3, 0 |
| NFPA Rating (Health, Fire, Reactivity) | : 1, 3, 0 |
| MSDS Version Number | : 14.3 |
| MSDS Effective Date | : 11/26/2005 |
| MSDS Revisions | : A vertical bar () in the left margin indicates an amendment from the previous version. |
| MSDS Regulation | : The content and format of this MSDS is in accordance with the |



Shell Chemicals

Material Safety Data Sheet

Methyl Ethyl Ketone

MSDS# 5390

Version 14.3

Effective Date 11/26/2005

According to OSHA Hazard Communication Standard, 29 CFR

1910.1200

- Uses and Restrictions** : OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Use as a solvent only in industrial manufacturing processes.
- MSDS Distribution** : The information in this document should be made available to all who may handle the product
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | | |
|-----------------------------|---|---|-------|--------|----|
| CHEMICAL LOCATION | Raw Material Storage | | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | |
| | | | 6 | GRID # | J5 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------------|---|---|----|--|---|----|
| CHEMICAL NAME | Ethyl Acetate | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | SAME | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
| CAS # | 141-78-6 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 10 | * If EHS is "Yes", all amounts must be LBS | | 13 |

| | | | | | | | | | |
|----------------------------|---|-------------------------------------|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE | <input type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|-------------------------------------|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|-----|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 200 | 19 | MAXIMUM DAILY AMOUNT | 500 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|-----|----|---------------------|------|----|------------------|----|

| | | | | | | | | | |
|-------|---|--|----|--------------|----------|----|-------------------|-------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 GAL DRUM | 25 |
| | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | | | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

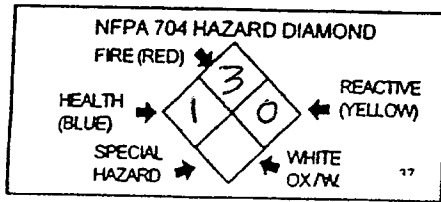
PLACARDING INFORMATION

UNDOT # UN 1173 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product: Ethyl acetate
MSDS number: 34
Material number: MSDS-034

Celanese Ltd.
1601 W. LBJ Freeway
P.O. Box 819005
Dallas, TX 75381-9005
United States
972 443 4000

Transportation emergency phone numbers:
In USA, call 800 424 9300
Outside USA, call 703 527 3887, collect calls accepted

2. Composition / Information on Ingredients

| Component & CAS Number | Weight % | OSHA hazard category: |
|---------------------------|----------|-----------------------|
| ETHYL ACETATE 141-78-6 | 99.5 | Hazardous |

3. Hazards Identification

Emergency Overview:

DANGER!

- Flammable liquid and vapor.
- May cause respiratory tract irritation.
- May cause eye irritation.
- Vapor is heavier than air and can travel considerable distance to a source of ignition and flashback.

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
Product emergency: 800 835 5235 Celanese, 24 hrs/day

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

Eyes
Central nervous system

For further information, see:

- Section 4 - First Aid Measures
- Section 5 - Fire Fighting Measures
- Section 6 - Accidental Release Measures
- Section 8 - Exposure Controls/Personal Protection
- Section 9 - Physical and Chemical Properties
- Section 10 - Stability and Reactivity

4. First Aid Measures

Skin:

Immediately flush skin with plenty of water. Remove contaminated shoes and clothing. Get medical attention if irritation develops and persists. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention.

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

If large quantities of this material are swallowed, call a physician immediately. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.

5. Fire Fighting Measures

NFPA: Health: 1 Flammability: 3 Reactivity: 0

Flammable properties

Flash point (test method): -4.5 C (24 F) (Closed Cup)

Flammable limits in air, % by volume:

Upper: 9 %

| | | |
|----------------------------------|--------------|---|
| Transportation emergency: | 800 424 9300 | CHEMTREC, 24 hrs/day |
| Product emergency: | 703 527 3887 | Outside USA, collect calls accepted, 24 hrs/day |
| | 800 835 5235 | Celanese, 24 hrs/day |

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

Lower: 2.2 %

Autoignition temperature: 427 C (800 F)

Products of combustion: Carbon Monoxide.

Extinguishing Media: Use alcohol type aqueous film forming foam for large fires. Use CO₂ or dry chemical for small fires.

Fire Fighting Environmental Concerns Vapors and combustion gases can be controlled using a water fog stream. Thoroughly decontaminate bunker gear and other fire-fighting equipment before re-use.

Fire Fighting Instructions Water may be ineffective but should be used to cool fire-exposed structures and vessels. Use water spray for large fires. Water spray can be used to reduce the intensity of flames and to dilute spills to a non-flammable mixture. Keep personnel removed from and upwind of fire. If potential for exposure to vapors or products of combustion exists, wear full fire fighting turnout gear and NIOSH approved self-contained breathing apparatus. Oxidizing chemicals may accelerate the burning rate in a fire situation. Vapor is heavier than air and can travel considerable distance to a source of ignition and flashback.

8. Accidental Release Measures

Spill or Leak Instructions

Eliminate ignition sources. See Section 8 for appropriate personal protective equipment. Contain spill with dikes of soil or nonflammable absorbent to minimize contaminated area. Water fog stream may reduce vapors. If fire potential exists, blanket spill with alcohol type aqueous film-forming foam or use water fog stream to disperse vapors. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in well-ventilated area. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:
5,000 lbs. of the material as is, based on a Reportable Quantity of 5,000 lbs. for ethyl acetate.

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

| | | |
|----------------------------------|--------------|---|
| Transportation emergency: | 800 424 9300 | CHEMTREC, 24 hrs/day |
| | 703 527 3887 | Outside USA, collect calls accepted, 24 hrs/day |
| Product emergency: | 800 835 5235 | Celanese, 24 hrs/day |

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

7. Handling and Storage

Handling: Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

This product may generate a static charge. Ground/bond equipment when transferring material to prevent static accumulation. Electrical equipment and circuits in all storage and handling must conform to requirements of National Electric Code (Article 500 and 501) for hazardous location.

Storage: Keep all containers tightly closed when not in use. Store out of direct sunlight and on an impermeable floor. Do not store with incompatible materials. See Section 10. Stability and Reactivity.

8. Exposure Controls / Personal Protection

Engineering Controls: General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred.

Protective Equipment A safety shower and eyebath should be readily available.

Skin Protection: Wear impervious clothing and gloves to prevent contact. Butyl rubber is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eyeface protection: Wear chemical goggles when there is a reasonable chance of eye contact.

Respiratory Protection: Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 3, Section 8 and Section 11.

| | | |
|----------------------------------|--------------|---|
| Transportation emergency: | 800 424 9300 | CHEMTREC, 24 hrs/day |
| Product emergency: | 703 527 3887 | Outside USA, collect calls accepted, 24 hrs/day |
| | 800 835 5235 | Celanese, 24 hrs/day |

| | |
|--|--|
| Product name: MSDS number: Material number: Published date: | Ethyl acetate 34 MSDS-034 03/21/2001(V2) |
| ETHYL ACETATE 141-78-6 | 99.5 Acute Exposure: <p>Oral LD50: 5620 to 10170 mg/kg (rats); ethyl acetate is practically nontoxic to animals by ingestion.</p> <p>Inhalation: LC50: 200 mg/l (rats, 1 hr.); Inhalation LC50: >29.3 mg/l (rats, 4 hrs.); ethyl acetate is practically nontoxic to animals by inhalation. Sedative effects (CNS depression typical of many solvents) have been observed in animals. Mild nose and throat irritation have been reported in humans at 400 ppm.</p> <p>Skin: Ethyl acetate was not irritating to rabbit skin. There was no evidence of cumulative skin irritation in human tests. It was not a skin sensitizer in the guinea pig maximization test. Human patch testing and epicutaneous testing was in general negative. Practically nontoxic dermally to animals (Dermal LD50, rabbits: >5000 mg/kg).</p> <p>Eye: Liquid mildly to moderately irritating to rabbit eyes in several tests. Vapors at 400 ppm have been reported to cause mild eye irritation in humans.</p> <p>Repeated Exposure: Rats received 0, 300, 900, or 3600 mg/kg ethyl acetate daily by gavage for 90 days. The high dose male rats showed significantly depressed body and organ weights and depressed food consumption. The No-Observed-Adverse-Effect Level (NOAEL) was considered to be 900 mg/kg. Rats were exposed to 0, 350, 750, or 1500 ppm ethyl acetate vapor for 6 hours per day, 5 days per week, for 13 weeks. No mortality was observed. Observations noted in the 750 and 1500 ppm groups included diminished alerting response (due to the sedative properties of ethyl acetate) during the daily 6-hour exposure periods which reversed after exposure ended. Decreased body weight and food consumption were also noted. No persistent neurotoxic effects were observed in a battery of tests conducted to assess this endpoint during subchronic inhalation exposure. Microscopic examination of the tissues and organs did not reveal evidence of systemic toxicity at any dose level. The only microscopic finding was irritation of the nasal tissue (nasal olfactory mucosa) at all doses. At 350 ppm, the nasal irritation was graded as "minimal" in severity.</p> <p>Mutagenicity: In Vitro: Results were equivocal. Ethyl acetate was negative in two Ames tests with <i>Salmonella typhimurium</i> and in a recombination assay with <i>Bacillus subtilis</i>. In the Sister Chromatid Exchange (SCE) assay with Chinese hamster ovary (CHO) cells, it was positive with activation and negative without activation. In five separate tests for aneuploidy with <i>Saccharomyces cerevisiae</i>, it was positive four times. It was negative for chromosomal aberrations in CHO cells, but positive in Chinese hamster lung fibroblasts. In Vivo: Not Mutagenic: Ethyl acetate was negative in three separate micronucleus assays - mouse (i.p.), Chinese hamster (i.p.), and Chinese</p> |

Transportation emergency:

Product emergency:

800 424 9300 CHEMTREC, 24 hrs/day
 703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
 800 835 5235 Celanese, 24 hrs/day

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

| | | |
|--|--|---|
| | | <p>hamster (gavage).</p> <p>Carcinogenicity: No studies conducted according to established scientific principles.</p> <p>Reproductive/Developmental Effects: In the subchronic inhalation study previously discussed, there were no effects at any dose level on the number of spermatids in the testes, the number of sperm in the epididymides, sperm motility or sperm morphology. No other studies conducted according to established scientific principles were available.</p> |
|--|--|---|

12. Ecological Information

| Component & CAS Number | Weight % | Component Ecological Information: |
|------------------------|----------|-----------------------------------|
| | | |

Transportation emergency:

800 424 9300
703 527 3887
800 835 5235

CHEMTREC, 24 hrs/day
Outside USA, collect calls accepted, 24 hrs/day
Celanese, 24 hrs/day

Product emergency:

| | |
|---------------------------------------|---|
| Product name: Ethyl acetate | |
| MSDS number: 34 | |
| Material number: MSDS-034 | |
| Published date: 03/21/2001(V2) | |
| ETHYL ACETATE 141-78-6 | <p>99.5</p> <p>Ecotoxicity: Ethyl acetate exhibits low acute toxicity to aquatic organisms.</p> <p>Acute Exposure:</p> <p>Fish (<i>Pimephales promelas</i>) 48-hr. LC50 = 270 ppm Fish (<i>Pimephales promelas</i>) 96-hr. LC50 = 230 ppm Fish (<i>Salmo gairdneri</i>) 48-hr. LC50 = 260 ppm Fish (<i>Salmo gairdneri</i>) 96-hr. LC50 = 454.7 ppm Fish (<i>Salmo gairdneri</i>) 96-hr. LC50 = 230 ppm Fish (<i>Leuciscus idus</i>) 48-hr. LC50 = 350 ppm Fish (<i>Leuciscus idus melanotus</i>) 48-hr. LC50 = 270 to 333 ppm Fish (<i>Oryzias latipes</i>) 48-hr. LC50 = 125 to 900 ppm Fish (<i>Poecilia reticulata</i>) 48-hr. LC50 = 210 ppm Fish (<i>Heteropneustes fossilis</i>) 96-hr. LC50 = 212.5 ppm</p> <p>Crustacean (<i>Artemia salina</i>) 24-hr. EC50 = 644.8 to 1590 ppm. Crustacean (<i>Daphnia cucullata</i>) 48-hr. EC50 = 164 ppm. Crustacean (<i>Daphnia magna</i>) 24-hr. EC50 >1000 to 3090 ppm. Crustacean (<i>Daphnia magna</i>) 48-hr. EC50 = 717 ppm. Crustacean (<i>Daphnia pulex</i>) 48-hr. EC50 = 262 ppm. Crustacean (<i>Gammarus pulex</i>) 48-hr. EC50 = 750 ppm. Crustacean (<i>Asellus aquaticus</i>) 48-hr. EC50 = 1600 ppm</p> <p>Mollusc (<i>Lymnea stagnalis</i>) 48-hr. EC50 = 1100 ppm. Platyhelminthe (<i>Dugesia lugubris</i>) 24-hr. EC50 = 3020 ppm. Hirudinean (<i>Erpobdella octoculata</i>) 48-hr. EC50 = 1200 ppm.</p> <p>Algae (<i>Microcystis aeruginosa</i>) 8-day Toxicity Threshold = 550 ppm. Algae (<i>Scenedesmus quadricauda</i>) 8-day TT = 15 ppm. Algae (<i>Scenedesmus pannonicus</i>) 48-hr. NOEC > 1000 ppm. Algae (<i>Scenedesmus subspicatus</i>) 72-hr. NOEC >100 ppm. Algae (<i>Scenedesmus subspicatus</i>) 48-hr. EC50 = 3300 to 5600 ppm. Algae (<i>Selenastrum capricornatum</i>) 96-hr. NOEC = 2000 ppm. Algae (<i>Chlorella pyrenoidosa</i>) 48-hr. NOEC >1000 ppm</p> <p>Protozoa (<i>Chilomonas paramecium</i>) 48-hr. TT = 3248 ppm. Protozoa (<i>Entosiphon sulcatum</i>) 72-hr. TT = 202 ppm. Protozoa (<i>Uronema parduzci</i>) 20-hr. TT = 1620 ppm. Bacteria (<i>Photobacterium phosphoreum</i>) 15-min. EC50 = 5870 ppm. Bacteria (<i>Photobacterium phosphoreum</i>) 5-min. EC50 = 1180 ppm. Bacteria (<i>Pseudomonas fluorescens</i>) 2-hr. EC50 = 7400 ppm. Bacteria (<i>Pseudomonas fluorescens</i>) 15-min. EC50 = 1500 ppm. Bacteria (<i>Pseudomonas putida</i>) 16-hr. TT = 650 ppm. Bacteria (<i>Pseudomonas putida</i>) 18-hr. EC10 = 2900 ppm.</p> <p>Chronic Exposure: Fish (<i>Pimephales promelas</i>) 32-day Chronic LOEC = 9.65 ppm</p> |

Transportation emergency:

Product emergency:

800 424 9300 CHEMTREC, 24 hrs/day
 703 527 3687 Outside USA, collect calls accepted, 24 hrs/day
 800 835 5235 Celanese, 24 hrs/day

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

| | | |
|--|--|--|
| | | <p>Environmental Fate:</p> <p>Degradation: Ethyl acetate was "readily biodegradable" when tested according to OECD Guideline 301D, Ready Biodegradability: Closed Bottle Test and had "100% degradation" when tested according to OECD Guideline 303A, "Simulation Test - Aerobic Sewage Treatment: Coupled Unit Test. Similar results were noted in numerous (at least 10) other tests for aerobic biodegradation. The BOD5/COD ratio was 0.81 when tested under aerobic conditions. A single test under anaerobic conditions indicated 100% degradation after 4 days. These data indicate that substantial biodegradation of ethyl acetate takes place rapidly under a variety of conditions. Photodegradation tests indicate that both direct and indirect photolysis of ethyl acetate can occur, with results variable depending upon the test conditions.</p> <p>Bioaccumulation: The log n-octanol/water partition coefficient was determined experimentally to be 0.6 (OECD Guideline 107) to 0.73 (vapor phase chromatography). These data suggest that ethyl acetate has low potential to bioaccumulate.</p> |
|--|--|--|

13. Disposal Considerations

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

EPA Hazardous Waste Code(s): U112

14. Transport Information

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
 703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
 Product emergency: 800 835 5235 Celanese, 24 hrs/day

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

US Department of Transportation

Shipping name: ETHYL ACETATE

Hazard class: 3 (Flammable Liquid)
UN/NA Number: UN 1173
Packing Group: II
DOT Reportable Quantity (RQ): 5000 lbs/2270 kg (Ethyl acetate)
Emergency Response Guide: 129

ICAO/IATA:

Proper Shipping Name: ETHYL ACETATE

Hazard Classification: 3 (Flammable Liquid)
IATA UN Number: UN 1173
Packing group: II
Label: (Flammable Liquid)

IMDG:

Proper Shipping Name: ETHYL ACETATE

Hazard Class: 3 (Flammable Liquid)
International Marine UN Number: UN 1173
Packing Group: II
Flash point (test method): -4.5 C (24 F) (Closed Cup)

Trade Information

Schedule B Code (export): 2915.31.0000

15. Regulatory Information

U.S. Federal Regulations

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

ETHYL ACETATE 99.5 141-78-6

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
Product emergency: 800 835 5235 Celanese, 24 hrs/day

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

| | |
|----------------------|--------|
| Pennsylvania | Listed |
| New York | Listed |
| New Jersey | Listed |
| Illinois | Listed |
| Massachusetts | Listed |
| Rhode Island | Listed |

U.S. REGULATORY RULES

TSCA Inventory:

We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations

ETHYL ACETATE 99.5 141-78-6
CERCLA Hazardous Substances Data- Listed

SARA 311:

| | |
|------------------------------------|-----|
| Acute health: | Yes |
| Chronic health: | No |
| Fire: | Yes |
| Sudden release of pressure: | No |
| Reactive: | No |

INTERNATIONAL REGULATIONS

International chemical inventories:

Listed on the chemical inventories of the following countries or qualifies for an exemption:
AUSTRALIA, CHINA, CANADA, EUROPE, KOREA, PHILIPPINES, JAPAN

18. Other information

Prepared by: Product Stewardship Department
Celanese Ltd.

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
Product emergency: 800 835 5235 Celanese, 24 hrs/day

| | |
|-------------------------|----------------|
| Product name: | Ethyl acetate |
| MSDS number: | 34 |
| Material number: | MSDS-034 |
| Published date: | 03/21/2001(V2) |

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Health: 1 Flammability: 3 Reactivity: 0

HMIS: Health: 1 Flammability: 3 Reactivity: 0

Revisions: The following sections have been revised since the last issue of this MSDS.

14. Transport Information

Note: **For industrial use only.** The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Celanese Ltd. makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards. Material safety data sheets are provided on the Internet by Celanese, Ltd. as a service to its customers. Possession of an Internet MSDS does not indicate that the possessor of the MSDS was a purchaser or user of the subject product.

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
Product emergency: 800 835 5235 Celanese, 24 hrs/day



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-------------------|----------------------|--|--|
| CHEMICAL LOCATION | Raw Material Storage | | |
|-------------------|----------------------|--|--|

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J5 | 7 |
|-----------------------------|---|---|-------|---|---|--------|----|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------|-------|--|---|--------------|---|----|
| CHEMICAL NAME | TOLUENE | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|---------|-------|--|---|--------------|---|----|

| | | | | | |
|-------------|------|---|-----------------|--|----|
| COMMON NAME | SAME | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
|-------------|------|---|-----------------|--|----|

| | | | | | |
|-------|----------|----|---|--|----|
| CAS # | 108-88-3 | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 |
|-------|----------|----|---|--|----|

| | | | | | | | | | | |
|----------------------------|---|-------------------------------------|-----------------------------------|----|-------------|---|----|--------|--|----|
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE | <input type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | | 16 |
|----------------------------|---|-------------------------------------|-----------------------------------|----|-------------|---|----|--------|--|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--------------------------------------|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|---|--------------------------------------|--|----|

| | | | | | | | | | | | |
|----------------------|------|----|----------------------|------|----|---------------------|------|----|------------------|--|----|
| AVERAGE DAILY AMOUNT | 1000 | 19 | MAXIMUM DAILY AMOUNT | 3000 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | | 22 |
|----------------------|------|----|----------------------|------|----|---------------------|------|----|------------------|--|----|

| | | | | | | | | | |
|-------|-------------------------------------|--|----|--------------|----------|----|-------------------|-------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 GAL DRUM | 25 |
|-------|-------------------------------------|--|----|--------------|----------|----|-------------------|-------------|----|

| | | | | | | |
|--|--|--|---------------------------------|--------------------------------------|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
|--|--|--|---------------------------------|--------------------------------------|--|----|

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

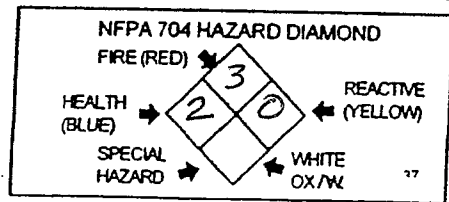
| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|----------|
| 100 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

| | | |
|------------------|--|----|
| UNDOT # | UN 1294 | 33 |
| DOT HAZARD CLASS | 3 | 34 |
| EPCRA | <input type="checkbox"/> YES <input type="checkbox"/> NO | 35 |
| X | If EPCRA, Please Sign Here | 36 |



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Shell Chemicals

Material Safety Data Sheet

Toluene
 MSDS# 7750
 Version 17.
 Effective Date 06/24/2003
 According to OSHA Hazard Communication Standard, 29 CFR
 1910.1200

1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : Toluene
Uses : Raw material for use in the chemical industry.Solvent.
Product Code : T1402, Q9138, Q9131
Company : **Shell Chemical LP**
 PO Box 2463
 HOUSTON TX 77252-2463
 USA
MSDS Request : 1-800-240-6737
Customer Service : 1-800-872-7435

Emergency Telephone Number
Chemtrec Domestic (24 hr) : 1-800-424-9300
Chemtrec International (24 hr) : 1-703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | Concentration |
|---------------|----------|---------------|
| Toluene | 108-88-3 | 100.00%W |

3. HAZARDS IDENTIFICATION

| Emergency Overview | |
|------------------------------|---|
| Appearance and Odour | : Colourless. Liquid. Aromatic. |
| Health Hazards | : Vapours may cause drowsiness and dizziness. Irritating to eyes. Harmful: may cause lung damage if swallowed. |
| Safety Hazards | : Flammable. Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. |
| Environmental Hazards | : Toxic to aquatic organisms. |

Health Hazards
Inhalation : Slightly irritating to respiratory system. Vapours may cause drowsiness and dizziness.
Skin Contact : May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking.
Eye Contact : Irritating to eyes.
Ingestion : Harmful: may cause lung damage if swallowed.
Other Information : Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s): Cardiovascular system. Central nervous system (CNS). Auditory system.



Shell Chemicals

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Kidney.
Liver.
Respiratory system.

- Signs and Symptoms** : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- Environmental Hazards** : Toxic to aquatic organisms.

4. FIRST AID MEASURES

- General Information** : Keep victim calm. Obtain medical treatment immediately.
- Inhalation** : DO NOT DELAY. Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- Skin Contact** : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.
- Eye Contact** : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.
- Ingestion** : If swallowed, do not induce vomiting; transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- Advice to Physician** : Potential for chemical pneumonitis. Consider: gastric lavage with protected airway, administration of activated charcoal. Potential for cardiac sensitisation, particularly in abuse situations. Hypoxia or negative inotropes may enhance these effects. Consider: oxygen therapy.

5. FIRE FIGHTING MEASURES

- Clear fire area of all non-emergency personnel.
- Flash point** : 4 °C / 39 °F (Abel)
- Explosion / Flammability limits in air** : 1.2 - 8 %(V)
- Auto ignition temperature** : 535 °C / 995 °F (ASTM E-659)
- Specific Hazards** : The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water. Carbon monoxide may be evolved if incomplete combustion occurs.



Material Safety Data Sheet

- Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Wear full protective clothing and self-contained breathing apparatus.
- Additional Advice** : Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Observe all relevant local and international regulations.

- Protective measures** : Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low areas. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Ventilate contaminated area thoroughly.
- Clean Up Methods** : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Vapour may form an explosive mixture with air. See Chapter 13 for information on disposal. U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Centre at (800) 424-8802.

7. HANDLING AND STORAGE

- General Precautions** : Avoid breathing of or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For



- guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid contact with skin, eyes, and clothing. Extinguish any naked flames. Do Not smoke. Remove ignition sources. Avoid sparks. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/sec until fill pipe submerged to twice its diameter, then ≤ 7 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Handle and open container with care in a well-ventilated area.
 - Storage** : Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Bulk storage tanks should be diked (bunded). Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. The vapour is heavier than air. Beware of accumulation in pits and confined spaces.
 - Product Transfer** : Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.
 - Recommended Materials** : For containers, or container linings use mild steel, stainless steel.
 - Unsuitable Materials** : Natural, butyl, neoprene or nitrile rubbers.
 - Container Advice** : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.
 - Additional Information** : Ensure that all local regulations regarding handling and storage facilities are followed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

| Material | Source | Type | ppm | mg/m3 | Notation |
|----------|----------|------|---------|-----------|----------------------------------|
| Toluene | ACGIH | TWA | 50 ppm | | |
| | ACGIH | SKIN | | | Can be absorbed through the skin |
| | OSHA Z1A | TWA | 100 ppm | 375 mg/m3 | |
| | OSHA Z1A | STEL | 150 ppm | 560 mg/m3 | |
| | SHELL IS | TWA | 50 ppm | | |

- Additional Information** : Skin notation means that significant exposure can also occur by absorption of liquid through the skin and of vapour through



the eyes or mucous membranes. SHELL IS is the Shell Internal Standard

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Firewater monitors and deluge systems are recommended. Eye washes and showers for emergency use.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)]. Where respiratory protective equipment is required, use a full-face mask. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1920.134.
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
- Eye Protection** : Chemical splash goggles (chemical monogoggles).
- Protective Clothing** : Chemical resistant gloves/gauntlets. Where risk of splashing or in spillage clean up, use chemical resistant one-piece overall with integral hood.
- Environmental Exposure Controls** : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Colourless Liquid
 Odour : Aromatic
 Odour threshold : 1.74 ppm
 Boiling point : Typical 110.4 - 110.8 °C / 230.7 - 231.4 °F
 Melting / freezing point : Typical -95 °C / -139 °F
 Flash point : 4 °C / 39 °F (Abel)
-



Material Safety Data Sheet

Toluene

MSDS# 7750

Version 17.

Effective Date 06/24/2003

According to OSHA Hazard Communication Standard, 29 CFR

1910.1200

| | |
|---|---|
| Explosion / Flammability limits in air | : 1.2 - 8 % (V) |
| Auto-ignition temperature | : 535 °C / 995 °F (ASTM E-659) |
| Vapour pressure | : Typical 1 kPa at 0 °C / 32 °F Typical 3 kPa at 20 °C / 68 °F Typical 12 kPa at 50 °C / 122 °F |
| Density | : Typical 871 kg/m ³ at 15 °C / 59 °F |
| Water solubility | : 0.515 kg/m ³ |
| n-octanol/water partition coefficient (log Pow) | : 2.65 |
| Kinematic viscosity | : 0.63 mm ² /s at 25 °C / 77 °F |
| Vapour density (air=1) | : 3.1 |
| Electrical conductivity | : Typical 8 pS/m at 20 °C / 68 °F (ASTM D-4308) |
| Dielectric constant | : Typical 2.4 |
| Volatile organic carbon content | : 100 % |
| Evaporation rate (nBuAc=1) | : 6.1 (DIN 53170, di-ethyl ether=1) 2 (ASTM D 3539, nBuAc=1) |
| Surface tension | : Typical 28.5 mN/m at 20 °C / 68 °F (ASTM D-971) |
| Molecular weight | : 92 g/mol |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | : Stable under normal conditions of use. Reacts violently with strong oxidising agents. |
| Conditions to Avoid | : Avoid heat, sparks, open flames and other ignition sources. Prevent vapour accumulation. |
| Materials to Avoid | : Strong oxidising agents. |
| Hazardous Decomposition Products | : Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. |

11. TOXICOLOGICAL INFORMATION

| | |
|----------------------------------|---|
| Basis for Assessment | : Information given is based on product data. |
| Acute Oral Toxicity | : Low toxicity: LD50 >2000 mg/kg, Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal. |
| Acute Dermal Toxicity | : Low toxicity: LD50 >2000 mg/kg, Rabbit |
| Acute Inhalation Toxicity | : Low toxicity: LC50 >5000 ppm / 1 hours, Rat High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death. |
| Skin Irritation | : May cause moderate irritation to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. |
| Eye Irritation | : Irritating to eyes. |
| Respiratory Irritation | : Inhalation of vapours or mists may cause irritation to the respiratory system. |



- Sensitisation** : Not a skin sensitiser.
- Repeated Dose Toxicity** : Central nervous system: repeated exposure affects the nervous system. Effects were seen at high doses only.
Respiratory system: repeated exposure affects the respiratory system. Effects were seen at high doses only.
Kidney: can cause kidney damage.
Liver: can cause liver damage.
Cardiovascular system: chronic abuse of similar materials has been associated with irregular heart rhythms and cardiac arrest.
Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss.
Repeated inhalation exposure of toluene to animals caused histological changes in the brain, degeneration of the heart tissue, and possible immune suppression.
Intentional abuse of toluene vapours has been linked to damage of brain, liver, kidney and to death.
- Mutagenicity** : Not mutagenic.
- Carcinogenicity** : Not carcinogenic in animal studies.

| Material | Carcinogenicity Classification |
|----------|---|
| Toluene | ACGIH Group A4: Not classifiable as a human carcinogen. |
| Toluene | IARC 3: Classification not possible from current data. |

- Reproductive and Developmental Toxicity** : Causes foetotoxicity in animals at doses which are maternally toxic.
Many case studies involving abuse during pregnancy indicate that toluene can cause birth defects, growth retardation and learning difficulties.
There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction (including spontaneous abortions and birth defects). The methodology of these studies and the reliability of their results have been questioned. In a study in rats, inhalation of toluene did not have adverse effects on reproduction.

12. ECOLOGICAL INFORMATION

- Acute Toxicity** :
- Fish** : Toxic: 1 < LC/EC/IC50 <= 10 mg/l
 - Aquatic Invertebrates** : Harmful: 10 < LC/EC/IC50 <= 100 mg/l
 - Algae** : Low toxicity: LC/EC/IC50 > 100 mg/l
- Mobility** : Floats on water.
If product enters soil, it will be highly mobile and may contaminate groundwater.
- Persistence/degradability** : Readily biodegradable meeting the 10 day window criterion.
Oxidises rapidly by photo-chemical reactions in air.
- Bioaccumulation** : Does not bioaccumulate significantly.



Shell Chemicals

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 MSDS# 7750
 Version 17.
 Effective Date 06/24/2003
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According to OSHA Hazard Communication Standard, 29 CFR

Other Adverse Effects : In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
- Container Disposal** : Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not, puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

Identification number UN 1294
 Proper shipping name Toluene
 Class / Division 3
 Packing group II
 Hazardous subst./material RQ: TOLUENE/1,000 LB
 Emergency Response Guide . 130

IMDG

Identification number UN 1294
 Proper shipping name TOLUENE
 Class / Division 3
 Packing group II
 Marine pollutant: No

IATA (Country variations may apply)

Identification number UN 1294
 Proper shipping name Toluene
 Class / Division 3
 Packing group II

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material

Federal Regulatory Status

Notification Status

AICS Listed.
 DSL Listed.



Shell Chemicals

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1910.1200

| | |
|------------|-------------------|
| INV (CN) | Listed. |
| ENCS (JP) | Listed. (3)-2 |
| TSCA | Listed. |
| EINECS | Listed. 203-625-9 |
| KECI (KR) | Listed. 97-1-298 |
| KECI (KR) | Listed. KE-33936 |
| PICCS (PH) | Listed. |

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Toluene (108-88-3) Reportable quantity: 1,000 lbs

Toluene (108-88-3) Reportable quantity: 1,000 lbs

Clean Water Act (CWA) Section 311

Toluene (108-88-3) Reportable quantity: 1,000 lbs

Toluene (108-88-3) Reportable quantity: 1,000 lbs

SARA Hazard Categories (311/312)

Immediate (Acute) Health Hazard. Fire Hazard.
Delayed (Chronic) Health Hazard.

SARA Toxic Release Inventory (TRI) (313)

Toluene (108-88-3) 100.00%

State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Known to the State of California to cause birth defects or other reproductive harm.

Toluene (108-88-3) 100.00% Developmental toxin.

New Jersey Right-To-Know Chemical List

Toluene (108-88-3) 100.00%

Pennsylvania Right-To-Know Chemical List

Toluene (108-88-3) 100.00% Environmental hazards
Listed.

16. OTHER INFORMATION

HMIS Rating (Health, Fire, : 2, 3, 0



Shell Chemicals

Material Safety Data Sheet

Toluene
MSDS# 7750
Version 17.

Effective Date 06/24/2003
According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

- Reactivity)**
NFPA Rating (Health, Fire, Reactivity) : 2, 3, 0
MSDS Version Number : 17
- MSDS Effective Date** : 06/24/2003
- MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.
- MSDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- Uses and Restrictions** : Raw material for use in the chemical industry.
Use as a solvent only in industrial manufacturing processes.
- MSDS Distribution** : The information in this document should be made available to all who may handle the product
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-----------|----|---------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|-----|---|
| CHEMICAL LOCATION | CLASS 1 ROOM | | | | | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | I 2 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|--------------------|---|--|-----------------|--|---|--|
| CHEMICAL NAME | TYZOR GBA TITANATE | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | SAME | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | * If EHS is "Yes", all amounts must be LBS |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | |

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|--|-----------------------------------|----|-----------------------|---|--|--|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | | |
|----------------------|-------------------------------------|--|----------------------|---|----------------------------------|---------------------|----------|----|-------------------|------------|----|
| AVERAGE DAILY AMOUNT | 15 | 19 | MAXIMUM DAILY AMOUNT | 40 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 5 GAL PAIL | 25 |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------|---|--|---------|
| 1 75 | NJ TRADE SECRET #00850201001-5522P | <input type="checkbox"/> Yes <input type="checkbox"/> No | — |
| 2 5-10 | METHANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-56-1 |
| 3 15-20 | ISOPROPYL ALCOHOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 67-63-0 |
| 4 5-10 | 1-BUTANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 71-36-3 |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

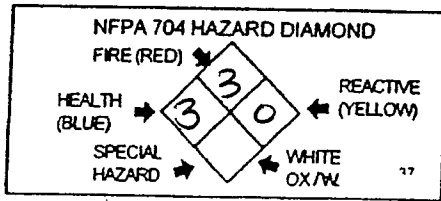
PLACARDING INFORMATION

UNDOT # UN 1993 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS Flammable Liquid 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

Page 1

5883PP "TYZOR" GBA TITANATE
Revised 29-MAR-2002

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number : DU002615

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

| Material | CAS Number | % |
|--|------------|-------|
| NJ Trade Secret Registry # 00850201001-5522P | | 75 |
| *Methanol | 67-56-1 | 5-10 |
| Isopropyl Alcohol | 67-63-0 | 15-20 |
| *1-Butanol | 71-36-3 | 5-10 |

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Potential Health Effects

The alcohols are harmful if inhaled or absorbed through the skin and may damage the liver, kidney and nervous system. Methanol may be fatal or cause blindness if ingested.

Skin contact may cause skin irritation with discomfort or rash. Skin permeation can occur in amounts capable of producing the effects of systemic toxicity. There are rare inconclusive reports of human sensitization from skin contact with Isopropyl Alcohol.

(HAZARDS IDENTIFICATION - Continued)

Eye contact may cause eye irritation with discomfort, tearing or blurring of vision.

Overexposure to the alcohols by inhalation, skin absorption or ingestion may include nonspecific discomfort such as nausea, headache, abdominal pain, flushing of the face, hypotension, or weakness; visual disturbances including blindness; hearing loss; temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; acidosis; irritation of the upper respiratory passages with coughing and discomfort; abnormal liver or kidney function; abnormal blood forming system function with anemia; cardiovascular effects; or fatality from gross overexposure.

Individuals with preexisting diseases of the retina, kidneys, liver or cardiovascular system may have increased susceptibility of the toxicity of excessive exposures to the alcohols.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.

(FIRST AID MEASURES - Continued)

Notes to Physicians

Ethanol (ETOH) is antidotal and should be administered early in the treatment. Ethanol is a potent inhibitor of Methanol metabolism because it is preferentially acted on by liver alcohol dehydrogenase, thus delaying or preventing toxic metabolites from Methanol.

Treatment is started after residual ingested substance is removed from the stomach. Ethanol is administered orally or IV with a goal of maintaining a blood alcohol level of approximately 22 mmol/L or 1.0 mg/L.

To prepare antidote, make a solution using 100 mL of 100 proof ethyl alcohol and 1900 mL of water. Give 1.5 mL/kg or 100 mL for an average adult. This may be mixed with orange juice for oral use if necessary. More Ethanol is to be given at 2 hour intervals to achieve and maintain the desired blood alcohol levels. Treatment may be necessary for several days.

The patient should be monitored for metabolic acidosis. Use of appropriate buffering solutions, such as bicarbonate, may be indicated.

Hemodialysis may be required.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : 12 C (54 F)
Method : PMCC

Flammable liquid.

Use explosion-proof exhaust systems to vent fumes resulting from hydrolysis or pyrolysis during use.

Extinguishing Media

Foam, Dry Chemical, CO2.

Avoid using water on large spills. Water may be used to flush away residues.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment. Do not use water.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material.

Accidental Release Measures

Place in container for disposal. Sweep up or use non-sparking shovel for cleanup. Flush residue with water and remove flush to an approved permitted treatment system.

This material is an ICR (ignitable, corrosive, reactive) substance under CERCLA. Unless released material is immediately cleaned up for reprocessing, recycling, or reuse, a release of 100 lbs. may trigger the reporting requirements of CERCLA Section 103.

HANDLING AND STORAGE

Handling (Personnel)

Do not get in eyes. Avoid breathing vapors or mist. Avoid contact with skin. Avoid contact with clothing. Wash thoroughly after handling.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Store in a well ventilated place. Keep container tightly closed.

Keep in dry container. Use only dry, clean utensils when handling. Freezing will affect physical appearance but will not damage. Thaw and mix before using.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Vent dryer or exhaust fumes outside work area.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses or coverall chemical splash goggles.

RESPIRATORS

Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING

Where there is potential for skin contact have available and wear as appropriate, impervious gloves, apron, pants, and jacket.

Exposure Guidelines

Applicable Exposure Limits

Methanol

PEL (OSHA) : 200 ppm, 260 mg/m³, 8 Hr. TWA
 TLV (ACGIH) : 200 ppm, 8 Hr. TWA, Skin
 STEL 250 ppm
 AEL * (DuPont) : 200 ppm, 8 & 12 Hr. TWA, Skin

Isopropyl Alcohol

PEL (OSHA) : 400 ppm, 980 mg/m³, 8 Hr. TWA
 TLV (ACGIH) : 400 ppm, 8 Hr. TWA
 STEL 500 ppm
 Notice of Intended Changes (2002)
 200 ppm, 8 Hr. TWA, A4
 STEL 400 ppm
 AEL * (DuPont) : 400 ppm, 8 & 12 Hr. TWA

1-Butanol

PEL (OSHA) : 100 ppm, 300 mg/m³
 TLV (ACGIH) : Ceiling 50 ppm, Skin
 Notice of Intended Changes (2002)
 20 ppm, 8 Hr. TWA
 AEL * (DuPont) : 20 ppm, 8 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 70 C (158 F) @ 760 mm Hg
% Volatiles : 25 WT%
Solubility in Water : Dispersible
pH : Slightly acidic
Odor : Alcoholic
Form : Liquid, Clear
Color : Red
Specific Gravity : 1.02 @ 25C (77F)

STABILITY AND REACTIVITY

Chemical Stability

Stable.

Incompatibility with Other Materials

Incompatible with water. Hydrolyzes slowly forming isopropanol.

Decomposition

Heating generates flammable olefins and other flammable organic compounds.

Polymerization

Conditions leading to polymerization are hydrolysis. Not a hazard.

TOXICOLOGICAL INFORMATION

Animal Data

"Tyzor" GBA

Oral LD50: 3,310 mg/kg in rats

Methanol

Inhalation 1 hour LC50: >145,000 ppm in rats
Skin Absorption LD50: 15,840 mg/kg in rabbits
Oral LD50: 9,100 mg/kg in rats

Isopropyl Alcohol

Inhalation 4 hour LC50: 16,000 ppm in rats
Skin Absorption LD50: 16.37 ml/kg (c. 12,900 mg/kg)
in rabbits

(TOXICOLOGICAL INFORMATION - Continued)

Oral LD50: 4,700 mg/kg in rats

1-Butanol

Inhalation 4 hour LC50: >8,000 ppm in rats
Skin Absorption LD50: 3,400 mg/kg in rabbits
Oral LD50: 2,510 mg/kg in rats

The product contains materials which are skin irritants, and moderate to severe eye irritants.

Toxic effects in animals from short exposure by inhalation or ingestion to the individual alcohols in this product include weight loss, respiratory irritation, cardiac effects, narcosis, anaesthetic effects, adrenal effects, liver effects, kidney effects, lung effects, blood effects, acidosis and blindness.

The effects of single exposure by inhalation of Isopropyl Alcohol include microscopic and morphologic changes of the epithelial cell of the nose and middle ear mucosa. No lung tumors were observed in long term inhalation exposure of Isopropyl Alcohol or Methanol.

No adequate animal test reports are available to define carcinogenic or reproductive hazards of methanol and 1-Butanol. Continued voluntary drinking of 2.5% aqueous Isopropyl Alcohol through two successive generations of rats produced no reproductive effects. The alcohols do not produce genetic damage in bacterial or mammalian cell cultures. Behavioral abnormalities and/or developmental effects were observed in the offspring of rats exposed to the individual alcohols at maternally toxic dose levels.

ECOLOGICAL INFORMATION-----
Ecotoxicological Information

Aquatic Toxicity

Methanol and Isopropyl Alcohol have very low toxicity with a 96 hour LC50 in fathead minnows of > 5,000 mg/L; for n-Butanol, the 96 hour LC50 in fathead minnows is 1730 mg/L.

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Recover nonusable free liquid and dispose of in approved and permitted incinerator. Do not flush to surface water or sanitary sewer system.

This material may be a RCRA regulated hazardous waste upon disposal due to the ignitability characteristic.

TRANSPORTATION INFORMATION

Shipping Information

DOT

Proper Shipping Name : FLAMMABLE LIQUID N.O.S.
(CONTAINS ISOPROPANOL, METHANOL,
N-BUTANOL)
Hazard Class : FLAMMABLE LIQUID
I.D. No. (UN/NA) : UN 1993
DOT Label(s) : FLAMMABLE LIQUID

DOT/IMO

Proper Shipping Name : FLAMMABLE LIQUID N.O.S.
(CONTAINS ISOPROPANOL AND METHANOL)
Hazard Class : 3
UN No. : 1993
DOT/IMO Label : FLAMMABLE LIQUID
Special Information : FLASH POINT: >12 C
Packing Group : II

Shipping Containers

55 gal. steel drum with polyethylene lining
5 gal. steel pail with baked-on enamel lining

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : Yes
Reactivity : No
Pressure : No

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating
Health : 3
Flammability : 3
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : MSDS Coordinator
Address : DuPont Chemical Solutions Enterprise
Wilmington, DE 19898
Telephone : 800-441-7515

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | |
|--------------|-----------|------------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|------------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|----------|-----|
| CHEMICAL LOCATION | LAB | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP # | 6 1 |
| | | 7 GRID # | J7 |

II. CHEMICAL INFORMATION

| | | | | | | | | | | | | | | | | | | |
|--|--|--|---|---|--|---|---|--|---------------------------------|--|--|---|--------------------------------------|--------------------------------------|--------------------------------------|--|-----------------------------------|----|
| CHEMICAL NAME | PRIMARY AMYL ACETATE, MIXED | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | | | | | | | | | | |
| COMMON NAME | SAME | | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | | | | | | | | | | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGF) | 13 | | | | | | | | | | | | | | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 | | | | | | | | | |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | | | | | | | | |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | | | | | | | | | | |
| AVERAGE DAILY AMOUNT | 2 | 19 | MAXIMUM DAILY AMOUNT | 2 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 | | | | | | | | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 25 | | | | | | | | |
| | *If EHS amount must be in pounds. | | | | | | | | 1 Gal Can | | | | | | | | | |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input checked="" type="checkbox"/> k. GLASS CONTAINER | <input type="checkbox"/> l. PLASTIC CONTAINER | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. RAIL CAR | <input type="checkbox"/> o. TOTE BIN | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. OTHER | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | | | | | | | | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 | | | | | | | | | | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|------|---|--|----------|
| 65 | PRIMARY AMYL ACETATE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 628-63-7 |
| 35 | 2-METHYL BUTYL ACETATE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 624-41-9 |
| 20.1 | 3-METHYL BUTYL ACETATE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 123-92-2 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

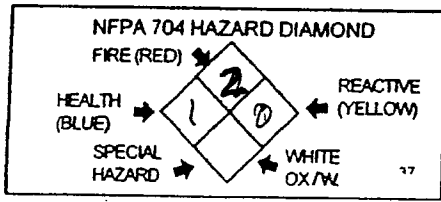
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



UNION CARBIDE CORPORATION MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE 02/28/97



Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

176-660004

Amyl Acetate

Primary Amyl Acetate, Mixed Isomers

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

CHEMICAL NAME: Primary Amyl Acetate

CHEMICAL FAMILY: Esters

FORMULA: CH₃COOC₅H₁₁ (mixed isomers)

MOLECULAR WEIGHT: 130.19

SYNONYMS: None

CAS # AND NAME: See Section III, "Ingredients"

II. PHYSICAL DATA

BOILING POINT, 760 mm Hg: 148 C 294.8 F

SPECIFIC GRAVITY(H₂O = 1): 0.8757 AT 20/20 C

FREEZING POINT: (sets to glass)
<-100 C (<-148 F)

VAPOR PRESSURE AT 20°C: 4 mmHg AT 20 C

Copyright 1997 Union Carbide.

EMERGENCY PHONE NUMBERS: 1-800-UCC-HELP (NUMBER AVAILABLE AT ALL TIMES) OR (304) 744-3487

UNION CARBIDE CORPORATION
39 Old Ridgebury Road, Danbury, CT 06817-0001

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

VAPOR DENSITY (AIR = 1): 4.5

EVAPORATION RATE (Butyl Acetate = 1): 0.42

SOLUBILITY IN WATER by wt: 0.2% AT 20 C

APPEARANCE: Transparent colorless

ODOR: Mild characteristic

PHYSICAL STATE: Liquid

PERCENT VOLATILES (by weight): 100

III. INGREDIENTS

| <u>%</u> | <u>MATERIAL</u> | <u>CAS#</u> | <u>EXPOSURE LIMIT</u> |
|----------|------------------------|-------------|-----------------------|
| 65 | Primary Amyl Acetate | 628-63-7 | See Section V |
| 35 | 2-Methyl Butyl Acetate | 624-41-9 | None established |
| <0.1 | 3-Methylbutyl Acetate | 123-92-2 | See Section V |

IV. FIRE AND EXPLOSION HAZARD DATA**FLASH POINT:**101 F (38 C)
Tag Closed Cup ASTM D 56106 F (41 C)
Tag Open Cup ASTM D 1310**FLAMMABLE LIMITS IN AIR**
% by volume:LOWER: 1.1
UPPER: 7.5**EXTINGUISHING MEDIA:**

Apply alcohol-type or all-purpose-type foams by manufacturer's recommended techniques for large fires. Use CO2 or dry chemical media for small fires.

SPECIAL FIRE FIGHTING PROCEDURES:

Use self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

This material may produce a floating fire hazard in extreme fire conditions.

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

See "Other Precautions" in Section IX.

V. HEALTH HAZARD DATA

EXPOSURE LIMIT(S): Primary Amyl Acetate (n-Pentyl Acetate): 100 ppm TWA, OSHA & ACGIH
Isoamyl Acetate (3-methylbutyl Acetate): 100 ppm TWA, OSHA & ACGIH

EFFECTS OF ACUTE OVEREXPOSURE:

SWALLOWING: May cause abdominal discomfort, nausea, vomiting and diarrhea.

SKIN ABSORPTION: Effects may include those described for swallowing.

INHALATION: May cause irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain, coughing, headache, nausea, vomiting, dizziness, drowsiness, disturbed vision and unconsciousness.

SKIN CONTACT: Brief contact is not irritating.
Prolonged or repeated contact may cause discomfort and local redness.

EYE CONTACT: Causes irritation, experienced as stinging and discomfort or pain.

EFFECTS OF REPEATED OVEREXPOSURE:

No adverse effects anticipated from available information.

OTHER HEALTH HAZARDS:

None currently known.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

ADDITIONAL TOXICITY INFORMATION:

Exposure of pregnant rats to primary amyl acetate vapor at 1000 ppm and greater resulted in maternal toxicity and evidence of delayed development. Exposure of pregnant rabbits to primary amyl acetate vapor at 1500 ppm resulted in maternal toxicity. However, no evidence of fetotoxicity or developmental toxicity was observed.

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention.

SKIN: Remove contaminated clothing. Wash skin with soap and water. If irritation persists or if contact has been prolonged, obtain medical attention.

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

INHALATION: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

EYES: Immediately flush eyes with water and continue washing for several minutes. Remove contact lenses, if worn. Obtain medical attention if discomfort persists.

NOTES TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (materials to avoid):
Strong oxidizing agents.
Nitric acid.
Sodium hydroxide.
Alkali metal hydroxides.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:
Burning can produce the following products:
Carbon monoxide and/or carbon dioxide.
Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: None known.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Wear suitable protective equipment.
Collect for disposal.
This product may be toxic to fish; avoid discharge to natural waters.

WASTE DISPOSAL METHOD:
Incinerate in a furnace where permitted under Federal, State, and local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:
Use self-contained breathing apparatus in high vapor concentrations.

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

VENTILATION:

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment.
Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

PROTECTIVE GLOVES:

Butyl

EYE PROTECTION:

Monogoggles

OTHER PROTECTIVE EQUIPMENT:

Eye Bath, Safety Shower

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

WARNING!
HARMFUL IF INHALED.
CAUSES EYE AND SKIN IRRITATION.
COMBUSTIBLE.

Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Keep away from heat and flame.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS:

PROCESS HAZARD: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

X. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations.
Trade Secrets are indicated by "TS".

FEDERAL EPA

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

Components present in this product at a level which could require reporting under the statute are:

| CHEMICAL | CAS NUMBER | UPPER BOUND |
|-----------------------|------------|-----------------|
| | | CONCENTRATION % |
| 3-Methylbutyl Acetate | 123-92-2 | 0.1 |
| n-Pentyl Acetate | 628-63-7 | 65 |

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

| CHEMICAL | CAS NUMBER | UPPER BOUND |
|----------|------------|-----------------|
| | | CONCENTRATION % |

This product does not contain toxic chemicals at levels which require reporting under the statute.

Toxic Substances Control Act (TSCA) STATUS:

The ingredients of this product are on the TSCA inventory.

STATE RIGHT-TO-KNOW**CALIFORNIA Proposition 65**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

MASSACHUSETTS Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

| CHEMICAL | CAS NUMBER | HAZARDOUS SUBSTANCES (= > 1%) |
|------------------|------------|--------------------------------|
| | | UPPER BOUND CONCENTRATION % |
| n-Pentyl Acetate | 628-63-7 | 65 |

PENNSYLVANIA Right-to-Know, Hazardous Substance List Hazardous Substances and Special Hazardous Substances on the List must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS**HAZARDOUS SUBSTANCES (= > 1%)**

| CHEMICAL | CAS NUMBER | UPPER BOUND CONCENTRATION % |
|------------------|------------|--------------------------------|
| n-Pentyl Acetate | 628-63-7 | 65 |

CALIFORNIA SCAQMD RULE 443.1 VOC'S:

VOC 874 g/l; Vapor Pressure 4.0 mm Hg @ 20 C

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: Immediate Health, Delayed Health

NEW YORK STATE BULK STORAGE REGULATIONS (6 NYCRR Parts 595-599)

This product is covered by 6 NYCRR for Bulk Storage and Release Reporting and Response. Technical guidance and recommended practices are as follows:

MATERIALS OF CONSTRUCTION

Suitable materials of construction are: Steel, stainless steel, aluminum, baked phenolic lined steel, galvanized steel, copper and copper alloys.

Materials not to be used: Polyvinyl Chloride.

STORAGE SYSTEM DESIGN

Design should comply with applicable industry, Federal, and local codes for a Class II Combustible liquid with regards to mechanical, electrical, safety and health components. Should also comply with NYS/DEC Chemical Bulk Storage regulations Parts 598.3 to 598.6 (for existing tanks) or Parts 599.2 and 599.7 (for new or substantially modified tanks).

CONDITIONS FOR STORAGE

Store at normal ambient temperatures.

INSPECTION AND MAINTENANCE

A testing/inspection program which ensures structural integrity and proper system operation should be established. Inspection and maintenance procedures and testing of equipment should comply with NYS/DEC regulations Parts 598.7 to 598.10.

TRANSFER AND UNLOADING

These operations should comply with NYS/DEC regulations, Part 598.5.

NOTE ---

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of the use of the product are not under the control of Union Carbide, it is the user's obligation to determine conditions of safe use of the product.

REVISED SECTIONS:

Revisions to this MSDS occurred in Section V - HEALTH HAZARD DATA

PRODUCT: 13741
F NUMBER: C0097H



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

| | | | |
|-----------------------------|---|---|--------|
| I. FACILITY INFORMATION | | | |
| CHEMICAL LOCATION | | | |
| CLASS 1 ROOM | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # |
| | | | 1 |
| | | 6 | GRID # |
| | | | I 2 |

| | | | |
|---|---|---|---|
| II. CHEMICAL INFORMATION | | | |
| CHEMICAL NAME | TYZOR TnBT TITANATE | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| | | 8 | TRADE SECRET |
| | | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| * If EPCRA see instructions | | | |
| COMMON NAME | SAME | 9 | An EHS Chemical |
| | | | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| *If EHS is "Yes", all amounts must be LBS | | | |
| CAS # | | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) |
| | | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE |
| | | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| | | | 15 |
| | | | CURIES |
| | | | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES |
| | | | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE |
| | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH |
| | | | 18 |
| AVERAGE DAILY AMOUNT | 15 | 19 | MAXIMUM DAILY AMOUNT |
| | | | 40 |
| | | | 20 |
| | | | ANNUAL WASTE AMOUNT |
| | | | NONE |
| | | | 21 |
| | | | STATE WASTE CODE |
| | | | 22 |
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE |
| | | | 365 DAYS |
| | | | 24 |
| | | | LARGEST CONTAINER |
| | | | 5 GAL PAIL |
| | | | 25 |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input checked="" type="checkbox"/> f. NONMETALLIC DRUM <input type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) |
| | | | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP |
| | | | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER |
| | | | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | | |
| | | | 27 |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | | |
| | | | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------|---|--|-----------|
| 1 95-99 | TETRABUTYL TITANATE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 5593-70-4 |
| 2 1-5 | TETRAISOPROPYL TITANATE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 546-68-9 |
| 3 0-2 | 1-BUTANOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 71-36-3 |
| 4 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

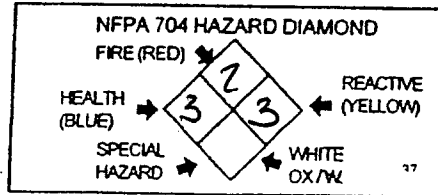
PLACARDING INFORMATION

UNDOT # UN 1120 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (IMO 3.3) 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

Page 1

"Tyzor" TnBT Titanate
5887PP Revised 28-MAR-2002

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"Tyzor" is a registered trademark of DuPont.

Corporate MSDS Number : DU002688

Tradenames and Synonyms

Butyl Titanate
Tetra-n-Butyl Titanate
Tetrabutyl Titanate
Titanium Tetrabutoxide
Butyl Titanate Monomer
"Tyzor" TBT Titanate

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Chemical Solutions Enterprise
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

| Material | CAS Number | % |
|-------------------------|------------|-------|
| Tetrabutyl Titanate | 5593-70-4 | 95-99 |
| Impurity: | | |
| Tetraisopropyl Titanate | 546-68-9 | 1-5 |
| *1-Butanol | 71-36-3 | 0-2 |

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

(COMPOSITION/INFORMATION ON INGREDIENTS - Continued)

Components (Remarks)

Various titanate impurities collectively expressed as tetraisopropyl titanate.

HAZARDS IDENTIFICATION

Potential Health Effects

Skin contact with "Tyzor" TnBT may cause irritation with itching, burning, redness, swelling or rash.

Eye contact with "Tyzor" TnBT may cause severe eye irritation with tearing, pain or blurred vision.

Inhalation of n-Butanol may cause irritation of the nose and throat with sneezing, sore throat or runny nose. There are reports that suggest headache, hearing loss and vertigo (dizziness) in workers exposed to less than 110 ppm.

Eye contact with n-Butanol vapor or aerosol may cause eye irritation with tearing, pain or blurred vision, and photophobia.

Repeated or excessive over-exposure of n-Butanol by inhalation or ingestion may cause central nervous depression with dizziness, confusion, incoordination, drowsiness or unconsciousness; impaired functioning of the blood-forming system with alterations in blood cell counts and/or anemia; and abnormal liver and kidney function with altered results on blood tests.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

(FIRST AID MEASURES - Continued)

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

The product hydrolyzes with water and may form a precipitate on contact with eyes. Mechanical removal of the precipitate may be advisable.

FIRE FIGHTING MEASURES

Flammable Properties

The flash point (PMCC) of freshly made "Tyzor" TnBT is 47 degC. If this material is exposed to water or to moist air, it will react, producing the alcohol associated with the titanium. This will cause the flash point to decrease. The flash point (PMCC) of a mixture of 80% (wt.) "Tyzor" TnBT and 20% (wt.) water, after 20 minutes exposure, is 34 - 38 degC. This water-exposed product should then be considered as DOT flammable.

Combustible.

Use explosion-proof exhaust systems to vent fumes resulting from hydrolysis or pyrolysis during use.

Extinguishing Media

Foam, Dry Chemical, CO2.

Avoid using water on large spills. Water may be used to flush away residue.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material.

Accidental Release Measures

Place in container for disposal. Do not apply water to a large spill. Sweep up or use a non-sparking shovel for cleanup.

The CERCLA Reportable Quantity (RQ) for 1-Butanol is 5,000 pounds.

HANDLING AND STORAGE

Handling (Personnel)

Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mist. Wash thoroughly after handling.

Storage

Store in a well ventilated place. Keep container tightly closed.

Keep in dry container. Use only dry, clean utensils when handling. Freezing will affect physical condition but will not damage. Thaw and mix before using. Keep away from heat and flames.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Keep away from heat and flames. Vent dryer fumes outside work area.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Personal Protective Equipment

EYE/FACE PROTECTION

Wear coverall chemical splash goggles.

RESPIRATORS

Wear NIOSH approved respiratory protection, as appropriate.

PROTECTIVE CLOTHING

Where there is potential for skin contact have available and wear as appropriate, impervious gloves, apron, pants, and jacket.

Exposure Guidelines

Applicable Exposure Limits

Tetraisopropyl Titanate

PEL (OSHA) : None Established
 TLV (ACGIH) : None Established
 AEL * (DuPont) : 10 mg/m³, 8 Hr. TWA, total dust

1-Butanol

PEL (OSHA) : 100 ppm, 300 mg/m³
 TLV (ACGIH) : Ceiling 50 ppm, Skin
 Notice of Intended Changes (2002)
 20 ppm, 8 Hr. TWA
 AEL * (DuPont) : 20 ppm, 8 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

 PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 180-184 C (356-363 F) @ 10 mm Hg
 % Volatiles : Less than 2%
 Solubility in Water : Hydrolyzes
 pH : Neutral
 Odor : Butyl alcohol
 Form : Liquid, Clear
 Color : Pale Yellow
 Specific Gravity : 0.99 @ 25C (77F)

STABILITY AND REACTIVITY

Chemical Stability

Stable.

Incompatibility with Other Materials

Incompatible with water. Hydrolyzes very rapidly forming butanol.

Decomposition

Heating generates flammable olefins and other flammable organic compounds.

Polymerization

Conditions leading to polymerization are hydrolysis. Not a hazard.

TOXICOLOGICAL INFORMATION

Animal Data

"Tyzor" TnBT:

| | |
|------------------------|--|
| Oral LD50: | 7,500 mg/kg in rats |
| Inhalation 4 hour ALC: | 11 mg/L in rats (tested as 25% in kerosene) |

n-Butanol:

| | |
|-------------------------|------------------------|
| Oral LD50: | 790 mg/kg in rats |
| Dermal LD50: | 3,400 mg/kg in rabbits |
| Inhalation 4 hour LC50: | >8,000 ppm in rats |

Animal testing indicates "Tyzor" TnBT is a moderate to severe eye irritant, a severe skin irritant, but not a skin sensitizer. Single exposure by inhalation to high doses of "Tyzor" TnBT (25% in kerosene) caused nasal and ocular discharge and non-specific effects such as weight loss. No animal data are available to define the carcinogenicity, developmental, reproductive or mutagenic hazards of "Tyzor" TnBT.

Animal testing indicates n-Butanol is a severe eye irritant and a moderate skin irritant. Single exposure by ingestion to n-Butanol caused narcosis. Repeated exposure caused increased adrenal weight and histopathological changes of the liver. Single exposure by inhalation to n-Butanol caused irritation of the respiratory tract, central nervous system depression and narcosis. Repeated exposure caused eye irritation; narcosis; histopathological changes of the

(TOXICOLOGICAL INFORMATION - Continued)

lungs, liver and kidneys; and altered hematology. No adequate animal data are available to define the carcinogenic or reproductive potential of n-Butanol. Animal data show developmental effects only at or near levels producing other toxic effects in the adult animal. Tests have shown that n-Butanol does not cause genetic damage in bacterial or mammalian cell cultures. It has not been tested in animals for genetic toxicity.

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Recover nonusable free liquid and dispose of in approved and permitted incinerator. Do not flush to surface water or sanitary sewer system.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO/IATA
Proper Shipping Name : Butanol Solution
Hazard Class : 3 (IMO-3.3)
UN No. : 1120
Packing Group : III
Label(s) : Flammable Liquid

Shipping Containers

Steel Drums : 55 gal drum; 5 gal pail

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : Yes
Reactivity : No
Pressure : No

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating
Health : 3
Flammability : 2
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsible for MSDS : MSDS Coordinator
> : DuPont Chemical Solutions Enterprise
Address : Wilmington, DE 19898
Telephone : (800) 441-7515

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CHEMICAL LOCATION | RAW MATERIAL STORAGE | | | 4 | | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J5 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|---|--|--|--|---|--|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| CHEMICAL NAME | IRGASPERSE BLUE 1614-UZ | | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | | | | | | | | | | | | | |
| COMMON NAME | DYE | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | | | | | | | | | | | | | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | | | | | | | | | | | | | | | | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 15 | CURIES | 16 | | | | | | | | | | | | |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | | | | | | | | | | | |
| AVERAGE DAILY AMOUNT | 1 | 19 | MAXIMUM DAILY AMOUNT | 5 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 | | | | | | | | | | | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 25 | | | | | | | | | | | |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | | | | | | | | | | | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 | | | | | | | | | | | | | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|--------------|
| 1 | 1-10 PROPRIETARY DYE | <input type="checkbox"/> Yes <input type="checkbox"/> No | TRADE SECRET |
| 2 | 1-10 PROPRIETARY DYE | <input type="checkbox"/> Yes <input type="checkbox"/> No | TRADE SECRET |
| 3 | 60-70 PROPYLENE GLYCOL METHYL ETHER | <input type="checkbox"/> Yes <input type="checkbox"/> No | 107-98-2 |
| 4 | 1-10 1,2-PROPANEDIOL | <input type="checkbox"/> Yes <input type="checkbox"/> No | 57-55-6 |
| 5 | 10-20 WATER | <input type="checkbox"/> Yes <input type="checkbox"/> No | 7732-18-5 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

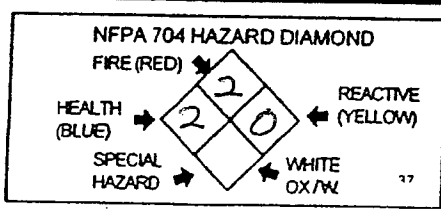
PLACARDING INFORMATION

UNDOT # UN 3092 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet

OSHA / ANSI Z400.1-2004 Compliant

MSDS date: 17-Apr-2006

NFPA Rating: Health: 2 Flammability: 2 Instability: 0
HMIS Rating: Health: 2 Flammability: 2 Physical Hazard: 0 Personal Protection: X

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: IRGASPERSE BLUE 1614-U2
Product Number: 0339009
Chemical Family: Anthraquinone dye solution
Intended Use: Dye solution
Manufacturer/Supplier: Ciba Specialty Chemicals Corporation
 540 White Plains Road
 Tarrytown, NY 10591
 8:30am - 5pm Phone Number: 1-914-785-2000
 MSDS Request Line (voicemail): 1-800-431-2360
 Customer Service/Product Information 1-800-474-4731
Emergency 24-Hour Health/Environmental Phone: 1-800-873-1138

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Signal Word: WARNING!
Physical Form: Liquid
Color: Blue
Odor: Aromatic
Health: This product may be an eye and skin irritant.. Prolonged skin contact with high amounts may cause drowsiness..
Physical Hazards: Flammable liquid.
Environmental: Releases to the environment are to be avoided.

OSHA Hazardous Substance: This material is classified as hazardous under OSHA regulations.
Potential Health Effects: Target Organ Effects: None Identified.

Primary Route(s) of Entry: Ingestion, Skin, Inhalation, Eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

| Components | CAS Number | Weight % | |
|-------------------------------|--------------|----------|-----------|
| Proprietary dye | Trade Secret | 1 - 10 | |
| Proprietary dye | Trade Secret | 1 - 10 | |
| Propylene Glycol Methyl Ether | 107-98-2 | 60 - 70 | 203-539-1 |
| 1,2-Propanediol | 57-55-6 | 1 - 10 | 200-338-0 |

NON-HAZARDOUS COMPONENTS

| Components | CAS Number | Weight % | |
|------------|------------|----------|-----------|
| Water | 7732-18-5 | 10 - 20 | 231-791-2 |

4. FIRST AID MEASURES

- Eyes:** Immediately flush the eye(s) with lukewarm, gently flowing water for 15 minutes or until the chemical is removed. Get immediate medical attention if irritation persists.
- Skin:** If clothing is contaminated, remove and launder before reuse. Wash off immediately with soap and plenty of water. Get medical attention if irritation occurs.
- Inhalation:** Remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention.
- Ingestion:** Do not induce vomiting. If vomiting occurs naturally, have casualty lean forward to reduce the risk of aspiration. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES

- Fire Fighting Measures:** Standard procedure for chemical fires.
- Suitable Extinguishing Media:** Carbon dioxide, dry chemical or foam.
- Fire Fighting Equipment:** Wear self-contained breathing apparatus and protective suit.
- Hazardous Combustion Products:** Burning may produce toxic combustion products.

6. ACCIDENTAL RELEASE MEASURES

- Cleanup Instructions:** Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Wear suitable protective equipment. Should not be released into the environment.

7. HANDLING AND STORAGE

- Handling:** As with all industrial chemicals, use good industrial practices when handling. Avoid eye, skin, and clothing contact. Do not inhale. Do not taste or swallow. Use only with adequate ventilation.
- Storage:** Keep containers tightly closed in a cool, well-ventilated place.
- Explosion Hazards:** Flammable liquid. Keep this product away from heat, sparks, and open flames.

For Industrial Use Only

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Guidelines:**

Exposure Summary:

| Components | OSHA PEL | OSHA STEL | ACGIH TWA | ACGIH STEL | Ciba/ Manufacturer IEL: |
|---|----------|----------------------------------|-----------|------------|-------------------------------|
| Propylene Glycol Methyl Ether 107-98-2 | | 553 mg/m ³ 150 ppm | 100 ppm | 150 ppm | |

Personal Protective Equipment

| | |
|--------------------------------|---|
| Eye/Face Protection: | Wear splash proof chemical goggles. |
| Skin Protection: | Wear chemical resistant gloves and protective clothing. |
| Respiratory Protection: | Use NIOSH approved respirator as needed to mitigate exposure. |
| Engineering Controls: | Work in well ventilated areas. Do not breathe vapors or mist. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|------------------------------------|
| Physical Form: | Liquid |
| Color: | Blue |
| Odor: | Aromatic. |
| Boiling Point: | 130 - 140°C (266 - 284°F) |
| Freezing/Melting Point: | Not determined |
| Solubility in water: | Miscible |
| Vapor Density: | Not determined |
| Vapor Pressure: | Not determined |
| Density: | ~1 g/cm ³ @ 20°C (68°F) |
| Specific Gravity: | Not determined |
| pH: | 5.5 - 6.5 |
| Percent Volatile: | 80 - 90 % (by weight) |
| VOC: | ~ 76 % |
| Partition Coefficient (Octanol/Water): | Not determined |
| Autoignition Temperature: | Not determined |
| Decomposition Temperature: | Not determined |
| Flammability Limits in Air: | |
| Upper | Not determined |
| Lower | Not determined |
| Flash point: | 45°C (113°F) |
| Test Method (for Flash Point): | Not determined |

10. STABILITY AND REACTIVITY

Stability: Stable.

MSDS date: 17-Apr-2006

Product Name: IRGASPERSE BLUE 1614-U2

Conditions to Avoid: None known

Incompatibility: Strong oxidizing agents, strong acids, strong bases.

Hazardous Decomposition Products: No decomposition expected under normal storage conditions.

Possibility of Hazardous Reactions: None expected.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:

| | |
|---|---------------------|
| 7732-18-5 Water | Not determined. |
| Proprietary dye | Not determined. |
| Proprietary dye | Not determined. |
| 107-98-2 Propylene Glycol Methyl Ether | Not determined. |
| 57-55-6 1,2-Propanediol | (Rats) LD50 20 g/kg |

Acute Dermal Toxicity:

| | |
|---|------------------------|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | (Rabbits) LD50 13 g/kg |
| 57-55-6 1,2-Propanediol | Not determined |

Acute Inhalation Toxicity:

| | |
|---|---|
| 7732-18-5 Water | 4700 ppm (0.5 hour) (Rats) |
| Proprietary dye | Not determined. |
| Proprietary dye | Not determined. |
| 107-98-2 Propylene Glycol Methyl Ether | (Rats) 10000 ppm (5 hours) May cause dizziness or headaches. Causes irritation to the respiratory tract. |
| 57-55-6 1,2-Propanediol | Not determined. |

Eye Irritation:

| | |
|--------------------|-----------------|
| 7732-18-5 Water | Not determined. |
| Proprietary dye | Not determined. |
| Proprietary dye | Not determined. |

MSDS date: 17-Apr-2006

Product Name: IRGASPERSE BLUE 1614-U2

| | |
|---|--------------------------------------|
| 107-98-2 Propylene Glycol Methyl Ether | (Rabbits) Mild to moderate irritant. |
| 57-55-6 1,2-Propanediol | (Rabbits) Mild eye irritant. |

Skin Irritation:

| | |
|---|---|
| 7732-18-5 Water | Not determined. |
| Proprietary dye | Not determined. |
| Proprietary dye | Not determined. |
| 107-98-2 Propylene Glycol Methyl Ether | (Rabbits) Mild skin irritant. (RTECS, 1995) |
| 57-55-6 1,2-Propanediol | (Humans) Mild skin irritant. |

Skin Sensitization:

| | |
|---|----------------|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Not determined |
| 57-55-6 1,2-Propanediol | Not determined |

Carcinogenicity (IARC; NTP; OSHA; ACGIH):

None of the components in this product at concentrations greater than 0.1% are listed by IARC; NTP, OSHA or ACGIH as a carcinogen.

Mutagenicity:

| | |
|---|--|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Ames Salmonella test (with or without activation): Non-mutagenic Chinese Hamster ovary cells: Non-clastogenic Rat primary hepatocytes: Non-clastogenic |
| 57-55-6 1,2-Propanediol | Not determined |

Reproductive Toxicity:

| | |
|---|--|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Inhalation exposure to make rats and rabbits of 300, 1,000 or 3,000 ppm, six hours/day, 5-day/week for 13 weeks did not show evidence of testicular effects. |

| | |
|----------------------------|----------------|
| 57-55-6 1,2-Propanediol | Not determined |
|----------------------------|----------------|

Teratogenicity:

| | |
|---|--|
| 7732-18-5 Water | Not determined. |
| Proprietary dye | Not determined. |
| Proprietary dye | Not determined. |
| 107-98-2 Propylene Glycol Methyl Ether | (Rats) (Mice) (Rabbits) Exposure to 0.04 to 2 mg/kg/day during the first 18 to 21 days of gestation were found to cause no effects in mice and rabbits; delayed ossification was seen in the rat. (Rats) Inhalation of 3,000 ppm for 6 hrs/day on day 6 to 15 of pregnancy was found to cause delayed ossification in offspring. (Rats) |
| 57-55-6 1,2-Propanediol | Not determined. |

Neurotoxicity:

| | |
|---|----------------|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Not determined |
| 57-55-6 1,2-Propanediol | Not determined |

Subacute Toxicity:

| | |
|---|----------------|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Not determined |
| 57-55-6 1,2-Propanediol | Not determined |

Subchronic Toxicity:

| | |
|---|---|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Repeated overexposure to 1-methoxy-2-propanol may cause liver and kidney damage and delayed skeletal development of the fetus, based on animal studies. |
| 57-55-6 1,2-Propanediol | Chronic exposure may produce central nervous system and kidney effects. |

Chronic toxicity:

| | |
|--------------------|----------------|
| 7732-18-5 Water | Not determined |
|--------------------|----------------|

| | |
|---|----------------|
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Not determined |
| 57-55-6 1,2-Propanediol | Not determined |

**Absorption / Distribution /
Excretion / Metabolism:**

| | |
|---|----------------|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Not determined |
| 57-55-6 1,2-Propanediol | Not determined |

Additional Information:

| | |
|---|---|
| 7732-18-5 Water | Not determined |
| Proprietary dye | Not determined |
| Proprietary dye | Not determined |
| 107-98-2 Propylene Glycol Methyl Ether | Prolonged skin contact with very large amounts may cause drowsiness |
| 57-55-6 1,2-Propanediol | May also cause central nervous system effects including drowsiness, dizziness, headache and blurred vision. |

12. ECOLOGICAL INFORMATION

Toxicity to Fish: Not determined

Toxicity to Invertebrates: Not determined

Toxicity to Algae: Not determined

Toxicity to Sewage Bacteria: Not determined

**Activated Sludge Respiration
Inhibition Test:** Not determined

**Biochemical Oxygen Demand
(BOD):** Not determined

Chemical Oxygen Demand (COD): Not determined

Total Oxygen Demand (TOD): Not determined

MSDS date: 17-Apr-2006

Product Name: IRGASPERSE BLUE 1614-U2

Biodegradability: Not determined

Bioaccumulation: Not determined

Additional Environmental Data: Not determined

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with local, state, provincial and federal regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):

Proper shipping name: 1-Methoxy-2-propanol solution
Hazard Class: 3
ID Number: UN3092
Packing group: III

International Maritime Dangerous Goods (IMDG):

Proper shipping name: 1-Methoxy-2-propanol solution
Hazard Class: 3
ID Number: UN3092
Packing group: III

International Air Transportation Authority (IATA):

Proper shipping name: 1-Methoxy-2-propanol solution
Hazard Class: 3
ID Number: UN3092
Packing group: III

15. REGULATORY INFORMATION

Federal Regulations

OSHA Hazardous Substance: This material is classified as hazardous under OSHA regulations

Clean Air Act - Hazardous Air Pollutants (HAP): This product does not contain any Hazardous Air Pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

Clean Air Act - Volatile Organic Compounds (VOC): This product contains the following SOCOMI Intermediate or Final Volatile Organic Compounds (VOC), as defined by the U.S. Clean Air Act Section 111 (40 CFR 60.489).

| Components | CAA Section 111 Volatile Organic Compounds |
|----------------------------|--|
| 1,2-Propanediol 57-55-6 | Listed. |

MSDS date: 17-Apr-2006

Product Name: IRGASPERSE BLUE 1614-U2

Clean Air Act - Ozone Depleting Substances (ODS): This product neither contains, nor was manufactured with, a Class I or Class II ozone depleting substance (ODS), as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A+B).

Clean Water Act - Priority Pollutants (PP): This product does not contain any priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40 CFR 401.15).

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261.21).

SARA Section 302 Extremely Hazardous Substances (EHS): This product does not contain any components regulated under Section 302 (40 CFR 355) as Extremely Hazardous Substances.

SARA Section 304 CERCLA Hazardous Substances: This product does not contain any components regulated under Section 304 (40 CFR 302) as hazardous chemicals for emergency release notification ("CERCLA" List).

| Components | Section 304 CERCLA Hazardous Substances | CERCLA Reportable Quantity |
|---|---|----------------------------|
| Propylene Glycol Methyl Ether 107-98-2 (60 - 70 %) | Listed. | 100 LBS |

SARA Section 311/312 Hazard Communication Standard (HCS): This product is regulated under Section 311/312 HCS (40 CFR 370). Its hazard(s):

SARA Section 313 Toxic Chemical List (TCL): This product does not contain any component(s) listed on the Section 313 Toxic Chemical List.

TSCA Section 8(b) Inventory Status: All component(s) comprising this product are either exempt or listed on the TSCA inventory.

TSCA Section 5(e) Consent Orders: This product is not subject to a Section 5(e) Consent Order.

TSCA Significant New Use Rule (SNUR): This product is not subject to a Significant New Use Rule (SNUR).

TSCA Section 5(f): This product is not subject to a Section 5(f)/6(a) rule.

TSCA Section 12(b) Export Notification: This product does not contain any component(s) that are subject to a Section 12(b) Export Notification

State Regulations

California Proposition 65: This product does not contain any components currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-To-Know: This product contains the following component(s) which are subject to Pennsylvania Right-to-Know disclosure requirement.

| Components | CAS Number | Pennsylvania Right-to-Know |
|-------------------------------|------------|----------------------------|
| Propylene Glycol Methyl Ether | 107-98-2 | Listed. |
| 1,2-Propanediol | 57-55-6 | Listed. |

International Regulations

MSDS date: 17-Apr-2006

Product Name: IRGASPERSE BLUE 1614-U2

Chemical Weapons Convention (CWC): This product does not contain any component(s) listed under the Chemical Weapons Convention Schedule of Chemicals.

Domestic Substance List (DSL) Status: All components either exempt or listed on the DSL.

16. OTHER INFORMATION

Disclaimer: The information contained herein is based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to such data or information. The user is responsible for determining whether the product is suitable for its intended conditions of use.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-------------------|-----------------------|--|--|
| CHEMICAL LOCATION | Material Storage Area | | |
|-------------------|-----------------------|--|--|

| | | | | | | |
|-----------------------------|---|---|-------|---|--------|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 6 | GRID # | 7 |
|-----------------------------|---|---|-------|---|--------|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------------|-------|---|---|--------------|---|----|
| CHEMICAL NAME | AC-502 Part B | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|---------------|-------|---|---|--------------|---|----|

| | | | | | |
|-------------|--------|---|-----------------|---|----|
| COMMON NAME | Primer | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
|-------------|--------|---|-----------------|---|----|

| | | | |
|-------|----|---|----|
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 |
|-------|----|---|----|

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | |
|--------------------------------------|---|----|-----------------------|---|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | 18 |
|--------------------------------------|---|----|-----------------------|---|----|

| | | | | | | | | | | |
|----------------------|---|----|----------------------|-----|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 1 | 19 | MAXIMUM DAILY AMOUNT | 100 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|---|----|----------------------|-----|----|---------------------|------|----|------------------|----|

| | | | | | | | | | |
|-------|---|---|----|--------------|----------|----|-------------------|-----------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> b. CUBIC FEET <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 1 Gal Can | 25 |
|-------|---|---|----|--------------|----------|----|-------------------|-----------|----|

| | | | | | | |
|--|---|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input checked="" type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|--|--|---|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|---------|
| 50-60 | 4-Chlorobenzotrifluoride | <input type="checkbox"/> Yes <input type="checkbox"/> No | 98-56-6 |
| 5-10 | Nitroethane | <input type="checkbox"/> Yes <input type="checkbox"/> No | 79-24-3 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # UN 1263 33

Refer to shipping papers or MSDS

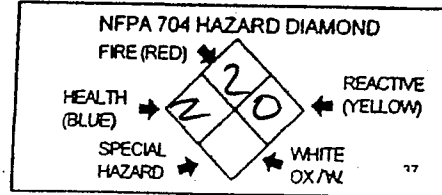
DOT HAZARD CLASS 3(IATA/CFR49) 3.3(IIMD)

Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36

If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 502 Part B

MSDS No: 250210-01
Effective: 01/27/09
Supercedes: 09/14/05
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-502 Part B
Generic Description: Primer
Product Use: Aircraft Coating

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

4-Chlorobenzotrifluoride

Nitroethane

Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 98-56-6 | 50 - 60 |
| 79-24-3 | 5 - 10 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: FLAMMABLE LIQUID AND VAPOR. MAY CAUSE ALLERGIC SKIN REACTION. CAUSES EYE IRRITATION. CAUSES SKIN IRRITATION. CAUSES DIGESTIVE TRACT IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: Causes irritation. May cause allergic skin reactions and sensitization.

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Eyes. Skin. Reproductive system

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys., Nervous system. Blood and/or blood-forming organs. Lungs and respiratory system. Skin. Immune systems and/or specific chemical allergies..

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|--------------------------|-------|------|-----|------|
| 4-Chlorobenzotrifluoride | No | No | No | No |
| Nitroethane | No | No | No | No |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. For large exposures use an emergency shower. Remove contaminated clothing and shoes. Wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (swallowing): Seek medical attention. **Do Not** induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|-------------|---------|----------------|
| Flash Point: | 86°F 30°C | Method: | Tag Closed Cup |
| Explosive Limits: | LEL (%) 0.9 | UEL(%) | 10.5 |
| Autoignition: | 414°C | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Oxides of nitrogen (NO, NO₂, ...) Halogenated compounds, hydrogen chloride, hydrogen fluoride.

FIRE AND EXPLOSION HAZARDS: Flammable. High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc. (and flash back. During a fire irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical or carbon dioxide. LARGE FIRES: Water spray, fog, or foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

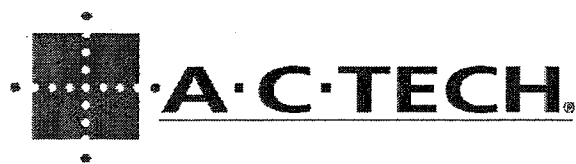
EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.



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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles face-shield, and gloves. Launder contaminated clothing before re-use .

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE: CONTROL/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|--------------------------|-----|-----|
| 4-Chlorobenzotrifluoride | 4 | ppm |
| Nitroethane | 100 | ppm |

OSHA - PEL

| | | |
|--------------------------|-----|-----|
| 4-Chlorobenzotrifluoride | 4 | ppm |
| Nitroethane | 100 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: An eye wash facility should be readily available. Wear chemical splash goggles.

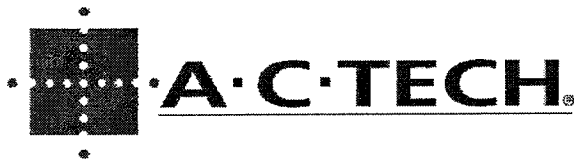
SKIN PROTECTION: Wear protective clothing, and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------|-------------------------|-----------------|--------------------------|
| Appearance: | Clear | Odor: | Nitroethane |
| Physical State: | Liquid | Solubility: | Slightly |
| pH: | Acidic | VOC Coating: | 187 g/L (1.57 lbs./gal.) |
| VOC Material: | 88 g/L (0.74 lbs./gal.) | Vapor density: | Heavier than air |
| Specific Gravity: | 1.30 | %Non-Vol.(w/w): | 0.0 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Strong bases. Amines

11. TOXICITY INFORMATION

COMPONENTS:

4-Chlorobenzotrifluoride:

| | | | |
|---------------------|--------|--------|-------|
| Oral LD50 | Rat | >6800 | mg/kg |
| Oral LD50 | Mouse | 11,500 | mg/kg |
| Vapor LC50 (4 hour) | Rat | 4479 | mg/kg |
| Dermal LD50 | Rabbit | >2700 | mg/kg |

Nitroethane:

| | | | |
|------|-------|-----|-------|
| LD50 | Mouse | 850 | mg/kg |
|------|-------|-----|-------|

12. ECOLOGICAL INFORMATION

Ecotoxicity

| | | | |
|----------------|--------------------------|-------|------|
| LC50 (96 hour) | Rainbow Trout | 13.5 | mg/L |
| LC50 (96 hour) | Bluegill sunfish | 12.0 | mg/L |
| MATC (31 day) | Fathead Minnow | <1.4 | mg/L |
| LC50 (48 hour) | Water Flea | 12.4 | mg/L |
| MATC (21 day) | Water Flea | <0.05 | mg/L |
| IC50 (72 hour) | Green & Blue-green algae | 500 | mg/L |

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



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16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

END OF MATERIAL SAFETY DATA SHEET



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | | |
|-----------------------------|---|--------|-------|---|
| CHEMICAL LOCATION | Material Storage Area | | | 4 |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 |
| | 6 | GRID # | G2-G7 | |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------------|---|--|-----------------|--|--|----|
| CHEMICAL NAME | AC-502 Part A | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input type="checkbox"/> No | 11 |
| COMMON NAME | Primer | 9 | | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | |

| | | | | | | | |
|--------------------------------------|---|----|-----------------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | |
| | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | | |

| | | | | | | | | | | |
|----------------------|---|----|----------------------|----------|----|---------------------|-------------------|-----------|------------------|----|
| AVERAGE DAILY AMOUNT | 1 | 19 | MAXIMUM DAILY AMOUNT | 100 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | | 24 | LARGEST CONTAINER | 1 Gal Can | | |

| | | | | | | |
|--|---|---|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|---|--|---|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 20-25 | Berium Chromate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 10294-40-3 |
| 10-15 | Butyl Cellosolve | <input type="checkbox"/> Yes <input type="checkbox"/> No | 111-76-2 |
| 10-15 | Solvent naphtha (petroleum) | <input type="checkbox"/> Yes <input type="checkbox"/> No | 64742-95-6 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

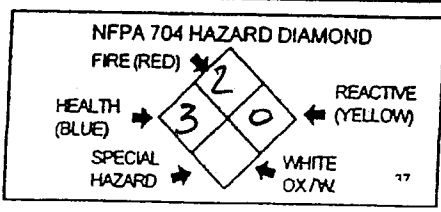
PLACARDING INFORMATION

UNDOT # UN 1263 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (ATAKFR49) 3.3 (IMD) 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 502 Part A

MSDS No: 350210-01
Effective: 01/27/09
Supercedes: 09/14/05
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-502 Part A
Generic Description: Primer
Product Use: Aircraft Coating

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 3* | 3 |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

| | CAS # | Approximate % (w/w) |
|---|-------------|---------------------|
| Barium chromate | 10294-40-3 | 20 - 25 |
| Butyl Cellosolve | 111-76-2 | 10 - 15 |
| Solvent naphtha (petroleum), Light aromatic | 64742-95-6 | 10 - 15 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE ALLERGIC SKIN REACTION. CAUSES SEVERE EYE IRRITATION. CAUSES SEVERE SKIN IRRITATION. CAUSES SEVERE DIGESTIVE TRACT IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND INCOORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: Causes severe irritation. May be absorbed through the skin. May cause allergic skin reactions and sensitization.

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

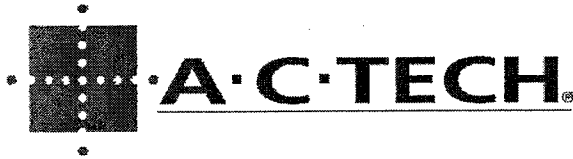
INGESTION (Swallowing): Severely irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Eyes. Skin. Reproductive system

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys., Nervous system. Blood and/or blood-forming organs. Lungs and respiratory system. Skin. Immune systems and/or specific chemical allergies..

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---|-------|------|-----|------|
| Barium chromate | A4 | 1 | Yes | No |
| Butyl Cellosolve | No | No | No | No |
| Solvent naphtha (petroleum), Light aromatic | No | No | No | No |



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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. For large exposures use an emergency shower. Remove contaminated clothing and shoes. Get immediate medical attention. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (swallowing): Seek medical attention. **Do Not** induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|----------------|---------|----------------------|
| Flash Point: | 116°F 46.7°C | Method: | Setaflash Closed Cup |
| Explosive Limits: | LEL (%) 1 | UEL(%) | 10 |
| Autoignition: | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Low molecular weight hydrocarbons.

FIRE AND EXPLOSION HAZARDS: Combustible. High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc. (and flash back. During a fire irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical or carbon dioxide. LARGE FIRES: Water spray, fog, or foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.



Material Safety Data Sheet

AC-[®] 502 Part A

MSDS No: 350210-01
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Supercedes: 09/14/05
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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles face-shield, and gloves. Professionally launder contaminated clothing before re-use .

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE: CONTROL/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|---|-----|-------------------|
| Barium chromate | 0.5 | mg/M ³ |
| Butyl Cellosolve | 25 | ppm |
| Solvent naphtha (petroleum), Light aromatic | Not | Available |

OSHA - PEL

| | | |
|---|-----|---------------------------|
| Barium chromate | 0.1 | mg/M ³ Ceiling |
| Butyl Cellosolve | 25 | ppm |
| Solvent naphtha (petroleum), Light aromatic | Not | Available |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: An eye wash facility should be readily available. Wear chemical splash goggles.

SKIN PROTECTION: Wear protective clothing, and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------|--------------------------|-----------------|--------------------------|
| Appearance: | Yellow | Odor: | Glycol ether |
| Physical State: | Liquid | Solubility: | Insoluble |
| pH: | Not Applicable | VOC: | 389 g/L (3.28 lbs./gal.) |
| VOC Material: | 389 g/L (3.28 lbs./gal.) | Vapor density: | Heavier than air |
| Specific Gravity: | 1.52 | %Non-Vol.(w/w): | 73.9 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-[®] 502 Part A

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Effective: 01/27/09
Supercedes: 09/14/05
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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Strong bases. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

| | | | |
|-------------------|------------|------|-------|
| Butyl cellosolve: | | | |
| Oral LD50 | Rat | 470 | mg/kg |
| Oral LD50 | Mouse | 1230 | mg/kg |
| Oral LD50 | Rabbit | 300 | mg/kg |
| Dermal LD50 | Rabbit | 220 | mg/kg |
| Dermal LD50 | Guinea pig | 230 | mg/kg |

Solvent naphtha (petroleum), light aromatic
LD50

None Available

Barium chromate:

Can cause liver, kidney, and reproductive injury. Possible skin and respiratory sensitizer. Chromate dusts have been shown to cause lung and other cancers in humans and laboratory animals. The product has the barium chromate fully encapsulated, so dusts are not anticipated.

LD50

None Available

12. ECOLOGICAL INFORMATION

No data are available on this product.

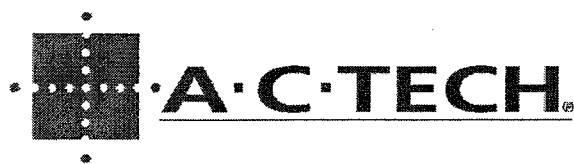
13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.



Material Safety Data Sheet
AC-® 502 Part A

MSDS No: 350210-01
Effective: 01/27/09
Supersedes: 09/14/05
Page: 5 of 6

14. TRANSPORT INFORMATION

| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
|---------------------|-------------------------|-------------------|---------|-----|
| | Paint | Y | Y | Y |
| DOT Label.....: | Flammable Liquid | UN/NA Id Num....: | UN 1263 | |
| Hazard Class.....: | 3 (ATA/49CFR) 3.3 (IMO) | USPS Mailability: | No | |
| Packing Group.....: | III | | | |

All the information in this section is for non-bulk packaging (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - none

SARA Section 313 Toxic Chemicals

- Barium chromate
- Chromium compounds

TSCA Section 8(d) Data Reporting Rule - None

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R - T - K

Barium chromate 10294-40-3 20 - 25
 Environmental Hazard.

Butyl Cellosolve 111-76-2 10 - 15

Solvent naphtha (petroleum), Light aromatic 64742-95-6 10 - 15

Non-hazardous trade secret ingredient(s) Proprietary Balance

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

Barium chromate 10294-40-3 20 - 25

Cancer Hazard and Reproductive Hazard

* Trace = present at less than 0.01 percent.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Class B Division 2 Class D Division 2 Sub-division A
 Class D Division 2 Sub-division B



Material Safety Data Sheet AC-® 502 Part A

MSDS No: 350210-01
Effective: 01/27/09
Supersedes: 09/14/05
Page: 6 of 6

CEPA - NPRI
Barium chromate
Chromium compounds

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

END OF MATERIAL SAFETY DATA SHEET



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-----------|----|---------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | |
|-------------------|----------------------|
| CHEMICAL LOCATION | RAW MATERIAL STORAGE |
|-------------------|----------------------|

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J5 | 7 |
|-----------------------------|---|---|-------|---|---|--------|----|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|--------------------------|-------|--|---|--------------|---|----|
| CHEMICAL NAME | P-CHLOROBENZOTRIFLUORIDE | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|--------------------------|-------|--|---|--------------|---|----|

| | | | | | |
|-------------|--------|---|-----------------|--|----|
| COMMON NAME | OX SOL | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
|-------------|--------|---|-----------------|--|----|

| | | | | |
|-------|---------|----|---|----|
| CAS # | 98-56-6 | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 |
|-------|---------|----|---|----|

| | | | | | | | | | |
|----------------------------|---|-------------------------------------|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE | <input type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|-------------------------------------|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|----------------------------------|--------------------------------------|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|-----------------------|----------------------------------|--------------------------------------|--|----|

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|------|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 500 | 19 | MAXIMUM DAILY AMOUNT | 1000 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|------|----|---------------------|------|----|------------------|----|

| | | | | | | | | | |
|-------|-------------------------------------|--|----|--------------|----------|----|-------------------|-------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 GAL DRUM | 25 |
|-------|-------------------------------------|--|----|--------------|----------|----|-------------------|-------------|----|

| | | | | | | |
|--|--|--|---------------------------------|--------------------------------------|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
|--|--|--|---------------------------------|--------------------------------------|--|----|

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

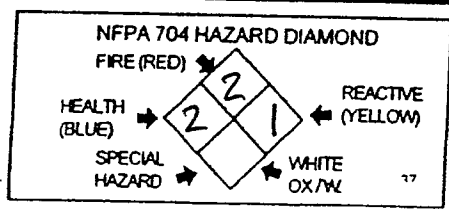
PLACARDING INFORMATION

UNDOT # UN 2234 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

660008
rec'd. 5-30-07

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identity: P-Chlorobenzotrifluoride

Technical Information: 270-830-1200

Emergency Number: 800-424-9300 (CHEMTREC)

Company Identity: Distributed by a Brenntag Company

Company Address: Brenntag Great Lakes LLC.
4420 N. Harley Davidson Avenue
Wauwatosa, WI 53225

Brenntag Mid-South Inc.
1405 Hwy 136 W
Hemperson, KY 42420

Brenntag Northeast, Inc.
81 West Huller Lane
Reading, PA 19605

Brenntag Southeast, Inc.
2000 East Pettigrew Street
Durham, NC 27703

Brenntag Southwest, Inc.
610 Fisher Road
Longview, TX 75604

Brenntag Pacific, Inc.
10747 Patterson Place
Santa Fe Springs, CA 90670

2. COMPOSITION, INFORMATION ON INGREDIENTS

Product Name: P-Chlorobenzotrifluoride

Content: 99.0 % min

Cas No: 98-56-6 P-Chloro-A,A,A-Trifluorotoluene 98 202-681-1

Appearance: Colorless Transparent liquid

3. HAZARDS IDENTIFICATION

The material may cause eye and skin irritation. May cause respiratory and digestive tract irritation.

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Flash Point: 47 deg C. Warning! Flammable liquid and vapor.

4. FIRST AID MEASURES

Eyes contact:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: contact:

Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Autoignition Temperature: > 650 °C (> 1,202.00 °F)

Flash Point: 47 °C (116.60 °F)

NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 1

6. ACCIDENTAL RELEASE MEASURES

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

7. HANDLING AND STORAGE

Handling:

Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

PERSONAL PROTECTIVE EQUIPMENT

Eyes:

Friday, June 01, 2007

Monday, December 04, 2006

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: clear, colorless

Odor: fish-like

Boiling Point: 136-138°C @ 760.00mmHg

Freezing/Melting Point: -36°

Specific Gravity/Density: 1.348cm³

Molecular Formula: C7H4ClF3

Molecular Weight: 180.58

10. TABILITY AND REACTIVITY

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:

Incompatible materials, ignition sources, excess heat, strong oxidants.

Incompatibilities with Other Materials: Oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 98-56-6; XS9145000

LD50/LC50:

CAS# 98-56-6: Inhalation, mouse: LC50 = 20 gm/m³; Inhalation, rat: LC50 = 22 gm/m³; Oral, mouse: LD50 = 11500 mg/kg; Oral, rat: LD50 = 13 gm/kg.

Friday, June 01, 2007

Monday, December 04, 2006

Carcinogenicity:

P-Chloro-A,A,A-Trifluorotoluene -

ACGIH: A4 - Not Classifiable as a Human Carcinogen (as F) (listed

12. DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. d.

14. TRANSPORT INFORMATION

US DOT

Shipping Name: CHLOROBENZOTRIFLUORIDES

Hazard Class: 3

UN Number: 2234

Packing Group: III

15. REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 98-56-6 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 98-56-6: Effective Date: 4/29/83; Sunset Date: 4/29/93

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

P-Chloro-A,A,A-Trifluorotoluene can be found on the following state right to know lists: California, (listed as ** no name**), Pennsylvania, (listed as ** no name**), Minnesota, (listed as ** no name **).

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

Risk Phrases:

R 10 Flammable.

Friday, June 01, 2007

Monday, December 04, 2006

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 9 Keep container in a well-ventilated place.

S 16 Keep away from sources of ignition - No smoking.

S 24/25 Avoid contact with skin and eyes.

S 28A After contact with skin, wash immediately with plenty of water.

S 33 Take precautionary measures against static discharges.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 98-56-6: 2

United Kingdom Occupational Exposure Limits

CAS# 98-56-6: OES-United Kingdom, TWA (listed as ** undefined **): 2.5 mg/m3

TWA (inorganic, as F)

This product has a WHMIS classification of B3, D2B.

CAS# 98-56-6 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 98-56-6: OEL-RUSSIA:STEL 20 mg/m3;Skin

16. ADDITIONAL INFORMATION

MSDS Creation Date: 9/02/1997, Revision #4 Date: 3/18/2003

MSDS Distributed by a Brenntag Company

Brenntag Great Lakes LLC.
4420 N. Harley Davidson Avenue
Wauwatosa, WI 53225

Brenntag Mid-South Inc.
1405 Hwy 103 W
Henderson, KY 42420

Brenntag Northeast, Inc.
81 West Huller Lane
Reading, PA 19605

Brenntag Southeast, Inc.
2000 East Pettigrew Street
Durham, NC 27703

Brenntag Southwest, Inc.
610 Fishers Road
Longview, TX 75057

Brenntag Pacific, Inc.
10747 Patterson Place
Santa Fe Springs, CA 90670

This MSDS is provided as an information resource only. It should not be taken as a warranty or representation for which Brenntag assumes legal liability. While Brenntag believes the information contained herein is accurate and compiled from sources believed to be reliable, it is the responsibility of the user to investigate and verify its identity. The buyer assumes all responsibility for using and handling the product in accordance with applicable federal, state, and local regulations.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | |
|--------------|-----------|----|---------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|---------|----|
| CHEMICAL LOCATION | Raw Material Storage | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP# | 1 |
| | | 6 GRID# | J5 |

II. CHEMICAL INFORMATION

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--|--|--|---|---|--|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|--|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| CHEMICAL NAME | BENZOYL CHLORIDE | | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | | | | | | | | | | | | | |
| COMMON NAME | SAME | | | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | | | | | | | | | | | | | |
| CAS # | 98-88-4 | 10 | FIRE CODE HAZARD CLASSES (supplied by GGF) | | | *If EHS is "Yes", all amounts must be LBS | | | | | | | | | | | | | | | |
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE | <input type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 | | | | | | | | | | | | |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | | | | | | | | | | | |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | | | | | | | | | | | | | |
| AVERAGE DAILY AMOUNT | 2 | 19 | MAXIMUM DAILY AMOUNT | 4 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 | | | | | | | | | | | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 25 | | | | | | | | | | | |
| | *If EHS, amount must be in pounds. | | | | | | | | | | | | | | | | | | | | |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input checked="" type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | | | | | | | | | | | | | | | | | | 27 |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | | | | | | | | | | | | | | | | | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

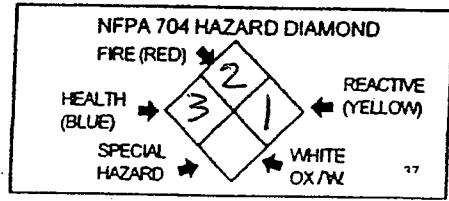
PLACARDING INFORMATION

UNDOT # 1736 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 8 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Benzoyl chloride

Product Number : 259950
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C7H5ClO
Molecular Weight : 140.57 g/mol

| CAS-No. | EC-No. | Index-No. | Concentration |
|-------------------------|-----------|--------------|---------------|
| Benzoyl chloride | | | |
| 98-88-4 | 202-710-8 | 607-012-00-0 | - |

3. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Combustible Liquid
Toxic by inhalation.
Harmful by ingestion.
Toxic by skin absorption
Corrosive
Carcinogen

HMIS Classification

Health Hazard: 3
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 1

NFPA Rating

Health Hazard: 3
Fire 2
Reactivity Hazard: 1

Potential Health Effects

| | |
|-------------------|--|
| Inhalation | Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May cause respiratory tract irritation. |
| Skin | Toxic if absorbed through skin. Causes skin burns. |
| Eyes | May cause eye irritation. Causes eye burns. |
| Ingestion | Harmful if swallowed. Causes burns. |

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 72 °C (162 °F) - closed cup

Ignition temperature 569 °C (1,056 °F)

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards

Container explosion may occur under fire conditions.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas. Moisture sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters**

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|------------------|---|-------|----------------------------------|------------|---|
| Benzoyl chloride | 98-88-4 | CEIL | 0.5 ppm 2.8 mg/m ³ | 1995-05-23 | US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004; Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) |
| Remarks | 1995-1996 Adoption. Refers to Appendix A -- Carcinogens. | | | | |

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form liquid
Colour colourless

Safety data

pH 2 at 1 g/l
Melting point -1 °C (30 °F)
Boiling point 73 - 74 °C (163 - 165 °F) at 15 hPa (11 mmHg)
198 °C (388 °F) at 1,013 hPa (760 mmHg)
Flash point 72 °C (162 °F) - closed cup

| | |
|-------------------------|---------------------------------|
| Ignition temperature | 569 °C (1,056 °F) |
| Lower explosion limit | 1.2 %(V) |
| Upper explosion limit | 4.9 %(V) |
| Vapour pressure | 1 hPa (1 mmHg) at 32 °C (90 °F) |
| Density | 1.212 g/cm ³ |
| Water solubility | 2 g/l |
| Relative vapour density | 4.85 - (Air = 1.0) |

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Exposure to moisture.

Materials to avoid

Strong oxidizing agents, Strong bases, Alcohols

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 1,900 mg/kg

LC50 Inhalation - rat - 2 h - 1,870 mg/m³

LD50 Dermal - rabbit - 790 mg/kg

Irritation and corrosion

Skin - rabbit - Severe skin irritation - 24 h

Eyes - rabbit - Severe eye irritation

Sensitisation

no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: Group 2A - The agent (mixture) is probably carcinogenic to humans. (Benzoyl chloride)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

| | |
|-------------------|--|
| Inhalation | Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May cause respiratory tract irritation. |
| Skin | Toxic if absorbed through skin. Causes skin burns. |
| Eyes | May cause eye irritation. Causes eye burns. |
| Ingestion | Harmful if swallowed. Causes burns. |

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

Ecotoxicity effects

| | |
|------------------|--|
| Toxicity to fish | LC50 - Pimephales promelas (fathead minnow) - 34.1 mg/l - 96 h |
| | LC0 - Brachydanio rerio (zebra fish) - 7.5 mg/l - 96 h |

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 1736 Class: 8 Packing group: II
Proper shipping name: Benzoyl chloride

IMDG

UN-Number: 1736 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: BENZOYL CHLORIDE
Marine pollutant: No

IATA

UN-Number: 1736 Class: 8 Packing group: II
Proper shipping name: Benzoyl chloride

15. REGULATORY INFORMATION

OSHA Hazards

Combustible Liquid, Toxic by inhalation., Harmful by ingestion., Toxic by skin absorption, Corrosive, Carcinogen

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

| | CAS-No. | Revision Date |
|------------------|---------|---------------|
| Benzoyl chloride | 98-88-4 | 1987-01-01 |

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

| | CAS-No. | Revision Date |
|------------------|---------|---------------|
| Benzoyl chloride | 98-88-4 | 1987-01-01 |

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|------------------|---------|---------------|
| Benzoyl chloride | 98-88-4 | 1987-01-01 |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|------------------|---------|---------------|
| Benzoyl chloride | 98-88-4 | 1987-01-01 |

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | |
|--------------|-------|------------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|------------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|----------|-----|
| CHEMICAL LOCATION | CLASS 1 ROOM | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP # | L |
| | | 6 GRID # | I 2 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|-------------------------------|--|--|---|---|---|----|
| CHEMICAL NAME | 1,1,3,3-TETRAMETHYL Guanidine | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | TMG | * If EPCRA see instructions | | | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
| CAS # | 80-70-6 | 10 FIRE CODE HAZARD CLASSES (supplied by GGGF) | | | *If EHS is "Yes", all amounts must be LBS | | 13 |

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|--|
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE <input type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | |
|----------------------------|---|----|-------------|---|----|--------|--|

| | | | | | | | |
|--------------------------------------|---|----|-----------------------|--|----|--|--|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE <input checked="" type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input type="checkbox"/> e. CHRONIC HEALTH | |
|--------------------------------------|---|----|-----------------------|--|----|--|--|

| | | | | | | | | | | |
|----------------------|----|----------------------|----|----|---------------------|------|----|------------------|--|----|
| AVERAGE DAILY AMOUNT | 20 | MAXIMUM DAILY AMOUNT | 80 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | | 22 |
|----------------------|----|----------------------|----|----|---------------------|------|----|------------------|--|----|

| | | | | | | | | |
|-------|---|----|--------------|----------|----|-------------------|------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 5 GAL PAIL | 25 |
|-------|---|----|--------------|----------|----|-------------------|------------|----|

| | | | | | | |
|--|---|---|--|--|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input checked="" type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|---|--|--|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 30 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

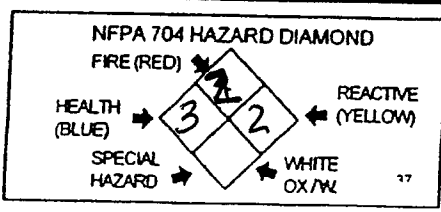
PLACARDING INFORMATION

UNDOT # UN 2920 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 8 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

1. Identification of the substance/preparation and of the company/undertaking

Trade name : 1,1,3,3-Tetramethylguanidine
Molecular formula : C₅H₁₃N₃
Use : Foaming agent, Intermediate
Company : Lonza Ltd
Muenchensteinerstrasse 38
CH-4002 Basel, Switzerland
Telephone: +41 61 316 81 11
Emergency telephone : Lonza Ltd, CH-4002 Basel, Switzerland
Telephone: +41 61 313 94 94 (24h)
Contact person : prodinfo@lonza.com

2. Hazards identification

Classification

Flammable.
Harmful if swallowed.
Causes burns.

3. Composition/information on ingredients

| Components / EC Label | Concentration |
|---|---------------|
| 1,1,3,3-Tetramethylguanidine (CAS-No.: 80-70-6) (EEC-No.: 201-302-7) C; R10, R22, R34 | >= 99 % |

R-phrases) See chapter 16

4. First aid measures

Inhalation : Move to fresh air. Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.
Skin contact : Take off all contaminated clothing immediately. After contact with skin, wash immediately with plenty of soap and water. Call a physician immediately.

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

- Eye contact : Immediately flush eye(s) with plenty of water. Call a physician immediately.
- Ingestion : Call a physician immediately. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

- Suitable extinguishing media : Water spray, Dry powder, Foam
- Specific hazards during fire fighting : Heating or fire can release toxic gas.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- Additional advice : Use water spray to cool unopened containers.

6. Accidental release measures

- Personal precautions : Use respirator when performing operations involving potential exposure to vapour of the product.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
- Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

7. Handling and storage

Handling

- Safe handling advice : Avoid contact with skin and eyes. Provide sufficient air exchange and/or exhaust in work rooms.
- Advice on protection against fire and explosion : Highly flammable. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

Storage

- Requirements for storage areas and containers : To maintain product quality, do not store in heat or direct sunlight. Keep container tightly closed. Keep in a dry, cool and well-ventilated place.
- Storage stability : Keep under nitrogen.

8. Exposure controls/personal protection

Personal protective equipment

- Hygiene measures : Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing.
- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
Respirator with a vapour filter (EN 141) Respirator with ABEK filter.
- Hand protection : Suitable material : Nitrile rubber
Break through time : > 480 min

Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Eye protection : Tightly fitting safety goggles
Face-shield
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.,
Rubber or plastic apron, Rubber or plastic boots

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

9. Physical and chemical properties

Appearance

Physical state : liquid
Colour : colorless to yellowish
Odour : amine-like

Safety data

pH : 12,7 (10 g/l ; 25 °C)
Melting point/range : < -30 °C
Boiling point/boiling range : 162 °C
Flash point : 50 °C
Method: Abel-Pensky c.c. DIN 51755
Ignition temperature : 350 °C
Upper explosion limit : 7,5 %(V)
Lower explosion limit : 1,0 %(V)
Vapour pressure : 2,2 hPa (20 °C)
Density : 0,912 g/cm³ (20 °C)
Method: DIN 51757
0,9160 g/cm³ (20 °C)
0,8984 g/cm³ (40 °C)
0,8805 g/cm³ (60 °C)
Water solubility : completely miscible
Solubility : Organic solvents: completely miscible
Viscosity, dynamic : 1,4 mPa.s (20 °C)
Relative vapour density : 4,04

Other data

Hygroscopy : hygroscopic

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

10. Stability and reactivity

- Conditions to avoid : no data available
- Materials to avoid : Strong acids
- Hazardous reactions : Stable under normal conditions.

11. Toxicological information

- Acute oral toxicity (LD50) : 835 mg/kg
Species: rat
Method: OECD Test Guideline 401
- Acute inhalation toxicity (LC50) : > 9 g/m³
Species: rat
Exposure time: 4 h
Method: OECD Test Guideline 403
- Skin irritation : Corrosive
Species: rabbit
Exposure time: 1 h
Method: DOT
- Genotoxicity in vitro : negative
Ames test, Salmonella typhimurium

12. Ecological information

Further information

- Additional advice : There is no data available for this product.

13. Disposal considerations

- Waste from residues : Dispose of in accordance with local regulations.
Contact waste disposal services.
- Contaminated packaging : Do not re-use empty containers.
Uncontrolled disposal or recycling of this packaging is not permitted and can be dangerous.

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

14. Transport information

ADR : Class: 8
Packaging group: II
Classification Code: CF1
Labels: Corrosive substance No. 8
Flammable liquid No. 3
Hazard identification No : 83
UN/ID No. : UN 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(1,1,3,3-Tetramethylguanidine)

RID : Class: 8
Packaging group: II
Classification Code: CF1
Labels: Corrosive substance No. 8
Flammable liquid No. 3
Hazard identification No : 83
UN/ID No. : UN 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(1,1,3,3-Tetramethylguanidine)

IATA Cargo : Class: 8
Packaging group: II
Labels: Corrosive substance No. 8
Flammable liquid No. 3
Packing instruction (cargo aircraft): 812
UN/ID No. : UN 2920
Proper shipping name : Corrosive liquid, flammable, n.o.s.
(1,1,3,3-Tetramethylguanidine)

IATA Passenger : Class: 8
Packaging group: II
Labels: Corrosive substance No. 8
Flammable liquid No. 3
Packing instruction (passenger aircraft): 808
UN/ID No. : UN 2920
Proper shipping name : Corrosive liquid, flammable, n.o.s.
(1,1,3,3-Tetramethylguanidine)

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

IMDG-Code : Class: 8
Packaging group: II
Labels: Corrosive substance No. 8
Flammable liquid No. 3
EmS: F-E , S-C

UN/ID No. : UN 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(1,1,3,3-Tetramethylguanidine)

49 CFR : Class: 8
Packaging group: II
Labels: Corrosive substance No. 8
Flammable liquid No. 3

UN/ID No. : UN 2920
Proper shipping name : Corrosive liquids, flammable, n.o.s.
(1,1,3,3-Tetramethylguanidine)

TDG : Class: 8
Packaging group: II
Labels: Corrosive substance No. 8
Flammable liquid No. 3

UN/ID No. : UN 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(1,1,3,3-Tetramethylguanidine)

SAFETY DATA SHEET

1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

15. Regulatory information

Additional advice : Classification and labelling according to Directive 67/548/EEC.

Symbol(s) :



Corrosive

R-phrase(s) R10: Flammable.
R22: Harmful if swallowed.
R34: Causes burns.

S-phrase(s) S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28: After contact with skin, wash immediately with plenty of soap and water.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

National legislation

Water contaminating class (Germany) : WGK 1: slightly water endangering

16. Other information

R-phrase(s)

R10 : Flammable.
R22 : Harmful if swallowed.
R34 : Causes burns.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | | |
|---------------|---------------------|--|-------|---|---|---|---|----|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | |
| COMMON NAME | AC-236 Class C Base | | 9 | | | * If EPCRA see instructions | | | |
| CAS # | | | 10 | | | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | | 13 |

| | | | | | | | | | |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|----------------------------------|--|-----------------------------------|----|-------------|---|----|--------|----|

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|---|---------------------------------|----|---|---|---|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|----|----|----------------------|-------|----|---------------------|-----|----|------------------|----|
| AVERAGE DAILY AMOUNT | 45 | 19 | MAXIMUM DAILY AMOUNT | 7,500 | 20 | ANNUAL WASTE AMOUNT | 500 | 21 | STATE WASTE CODE | 22 |
|----------------------|----|----|----------------------|-------|----|---------------------|-----|----|------------------|----|

| | | | | | | | | | |
|-------|--|---|----------------------------------|-------------------------------------|----------|----|-------------------|----------------|----|
| UNITS | <input checked="" type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
| | | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | * If EHS, amount must be in pounds. | | | | | |

| | | | | | | |
|--|--|--|--|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP. | <input type="checkbox"/> t. OTHER | |

| | | | | |
|------------------|--|---|---|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|---|---|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|---|---|---------------------------------------|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 5-10 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 10-25 | Calcium Carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 10-25 | Limestone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1317-65-3 |
| 1-5 | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-7 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

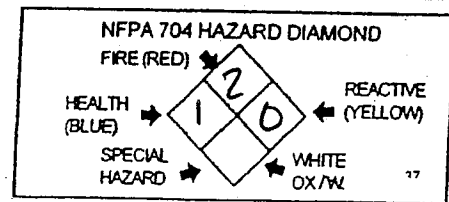
PLACARDING INFORMATION

UNDOT # Not Regulated 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®]236 Class C Base

MSDS No: 32363-05
Effective: 01/26/09
Supercedes: 12/13/04
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-236 Class C Base
Generic Description: Polysulfide sealant
Product Use: Faying grade aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 1 | 1 |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Toluene
Calcium carbonate
Limestone
Titanium Dioxide
Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|----------------|---------------------|
| 108 - 88 - 3 | 5 - 10 |
| 471 - 34 - 1 | 10 - 25 |
| 1317 - 65 - 3 | 10 - 25 |
| 13463 - 67 - 7 | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CAUSES SEVERE EYE IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. COMBUSTIBLE LIQUID AND VAPOR MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin.

EYE CONTACT: May cause slight to mild irritation.

SKIN CONTACT: Prolonged or repeated contact may cause irritation.

INHALATION (Breathing): Can be irritation to eyes, nose, and respiratory tract following prolonged exposure.

INGESTION (Swallowing): Not hazardous in normal industrial use. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea).

TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
| Calcium Carbonate | No | No | No | No |
| Toluene | No | No | No | No |
| Limestone | No | No | No | No |
| Titanium Dioxide | No | No | No | No |



Material Safety Data Sheet AC-® 236 Class C Base

MSDS No: 32363-05
Effective: 01/26/09
Supercedes: 12/13/04
Page: 2 of 6

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|---------------------|------------------------|--------------|----------------------|
| Flash Point..... | 157F (69.4C) | Method:..... | Setaflash Closed Cup |
| Explosive Lmts..... | LEL (%) Not Determined | UEL (%) | Not Determined |
| Autoignition..... | Not Determined | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

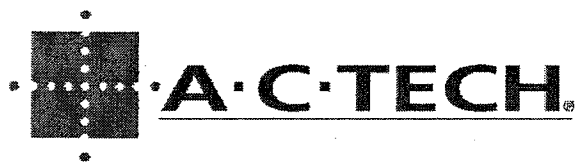
CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



Material Safety Data Sheet

AC-[®] 236 Class C Base

MSDS No: 32363-05
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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area.

TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: **Attention!** This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|-------------------|----|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Toluene | 50 | ppm - Skin |
| Limestone | 10 | mg/M ³ Total dust |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - PEL

| | | |
|-------------------|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Toluene | 100 | ppm |
| Limestone | 5 | mg/M ³ Resp. dust |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLV's or PEL's).

EYE PROTECTION: Wear chemical splash goggles or safety glasses with side shields. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------------|----------------|---------------------|-----------------------|
| Appearance.....: | Off-white | Odor.....: | Sulfide |
| Physical State.....: | Paste | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | VOC Material.....: | 120 g/l (1.0 lbs/gal) |
| Specific Gravity....: | 1.61 | % Non - Vol. (w/w): | 92 - 95 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-[®] 236 Class C Base

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Not Applicable.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors were observed at 250-mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with all local, state, and federal regulations.

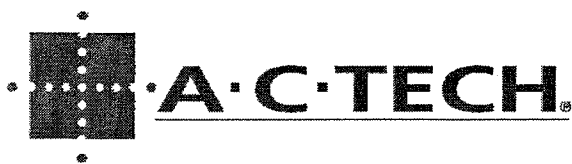
GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------------|----------------|-------------------|----------------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin solution | Y | Y | Y |
| DOT Label.....: | Non regulated | UN/NA Id Num..: | Not Applicable | |
| Hazard Class.....: | Not Applicable | USPS Mailability: | No | |



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For a two-compartment container that contains parts A and B. See above information.

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat

SARA Section 313 Toxic Chemicals
Toluene

TSCA Section 8(d) Data Reporting Rule
Toluene

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

| | | |
|--|----------------|---------|
| Pennsylvania - New Jersey R - T - K | | |
| Toluene | 108 - 88 - 3 | 5 - 10 |
| Calcium carbonate | 471 - 34 - 1 | 10 - 25 |
| Limestone | 1317 - 65 - 3 | 10 - 25 |
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Environmental and Special Hazard. | | |
| Non - hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

| | | |
|-----------------------------|----------------|---------|
| Quartz (crystalline silica) | 14808 - 60 - 7 | < 0.01 |
| Cancer Hazard. | | |
| Toluene | 108 - 88 - 3 | 5 - 10 |
| Reproductive Hazard. | | |
| Formaldehyde | 50 - 00 - 0 | Trace * |
| Cancer Hazard. | | |

* Trace = Present at less than 0.01 percent.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 3 Class D Division 2 Sub-division A
Class D Division 2 Sub-division B



Material Safety Data Sheet
AC-® 236 Class C Base

MSDS No: 32363-05
Effective: 01/26/09
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CEPA - NPRI
Toluene

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|-----------------------|---|-----------------------------|---|---|-----------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | AC-632 B Class B Base | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | | 13 | | | | |

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|--|-----------------------------------|----|-----------------------|---|---|--|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | | |
|----------------------|-------------------------------------|--|---|----------------------------------|----|---------------------|----------|----|-------------------|----------------|----|
| AVERAGE DAILY AMOUNT | 3 | 19 | MAXIMUM DAILY AMOUNT | 250 | 20 | ANNUAL WASTE AMOUNT | 10 | 21 | STATE WASTE CODE | 22 | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 10-20 | Limestone | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1317-65-3 |
| 5-10 | Aluminum | <input type="checkbox"/> Yes <input type="checkbox"/> No | 7429-90-5 |
| 1-5 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| 1-5 | Titanium Dioxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13463-67-7 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

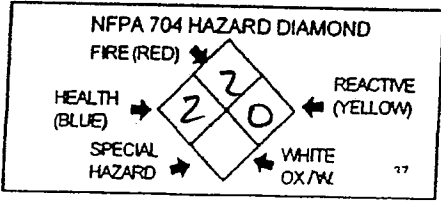
PLACARDING INFORMATION

UNDOT # UN1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (IATA/CFR49) 3.3 (IMO) 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-® 632 Class B Base

MSDS No: 36322-09
Effective: 01/27/09
Supercedes: 02/11/08
Page: 1 of 6

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN #834-100

Product ID: AC-632 Class B Base
Generic Description: Polysulfide sealant compound
Product Use: Aerodynamic smoothing compound

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|-------------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 3 | 2 |
| Reactivity | 0 | 0 |
| | * = Chronic | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Limestone
Aluminum
Toluene
Titanium Dioxide
Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|----------------|---------------------|
| 1317 - 65 - 3 | 10 - 20 |
| 7429 - 90 - 5 | 5 - 10 |
| 108 - 88 - 3 | 1 - 5 |
| 13463 - 67 - 7 | 1 - 5 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CAUSES SEVERE EYE IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: May cause slight to mild irritation. Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis).

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Nervous system. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|------------------|-------|------|-----|------|
| Limestone | No | No | No | No |
| Aluminum | No | No | No | No |
| Toluene | No | No | No | No |
| Titanium Dioxide | No | No | No | No |



Material Safety Data Sheet AC-[®] 632 Class B Base

MSDS No: 36322-09
Effective: 01/27/09
Supercedes: 02/11/08
Page: 2 of 6

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|------------------|---------------|---------|-----------------|
| Flash Point: | 45°F (7°C) | Method: | Seta |
| Explosive Limit: | | LEL(%) | Not Established |
| Autoignition: | Not Available | UEL(%) | Not Established |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. **LARGE FIRES:** Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Toluene

RQ = 1000 LB



Material Safety Data Sheet

AC-® 632 Class B Base

MSDS No: 36322-09
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7. HANDLING AND STORAGE

Storage Temperature < 120F 48.8C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.

TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

SPECIAL INSTRUCTIONS: See container and/or technical data sheet for instructions on use. See container and/or technical data sheet for instructions on use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|------------------------------|----|------------------------------|
| Limestone | 10 | mg/M ³ Total dust |
| Aluminum (Metal dust, as Al) | 10 | mg/M ³ |
| Toluene | 50 | ppm |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - PEL

| | | |
|------------------------------|-----|------------------------------|
| Limestone | 5 | mg/M ³ Resp. dust |
| Aluminum (Metal dust, as Al) | 10 | mg/M ³ |
| Toluene | 100 | ppm |
| Titanium Dioxide | 10 | mg/M ³ |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|--------------------|----------------------|-------------------|-----------------|
| Appearance: | Aluminum | Odor: | Mercaptan |
| Physical State: | Paste | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density: | Heavier than air | Evaporation Rate: | Not Applicable |
| VOC Material.....: | 70 g/l (0.6 lbs/gal) | Specific Gravity: | 1.57 |
| %Non-Vol(w/w)..: | 95 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Acids. Strong bases.

11. TOXICITY INFORMATION

COMPONENTS:

Limestone:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis). Can contain trace amounts of crystalline silica as an impurity.

Aluminum:

Prolonged breathing of dust can lead to particulate deposition within the lungs. May cause transient irritation to eyes and/or skin.

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors was observed at 250 mg/M³ respirable dust level. This level is 50 times the current occupational exposure level and is not expected to correlate to human exposures.

12. ECOLOGICAL INFORMATION

No ecological data on the product itself is available.

The product must not be allowed to run into drains or waterways.

Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with all local, state, and federal regulations.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|-------------|-----------------------------|---------------------------------------|------|-----|
| Weight (lb) | Shipping Name | 49 CFR | IATA | IMO |
| | Resin Solution, Flammable | Y | Y | Y |
| | DOT Label: Flammable Liquid | UN/NA Id: UN 1866 | | |
| | DOT Packaging Group: II | Hazard Class: 3(IATA/49CFR) 3.3 (IMO) | | |

For a two-compartment container that contains Parts A and B. See the above information.



Material Safety Data Sheet AC-[®] 632 Class B Base

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15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat
Formaldehyde

SARA Section 313 Toxic Chemicals
Aluminum, Toluene, Formaldehyde

TSCA Section 8(d) Data Reporting Rule
Toluene

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|----------------|---------|
| Limestone | 1317 - 65 - 3 | 10 - 20 |
| Aluminum | 7429 - 90 - 5 | 5 - 10 |
| Environmental Hazard. | | |
| Toluene | 108 - 88 - 3 | 1 - 5 |
| Environmental Hazard. | | |
| Titanium Dioxide | 13463 - 67 - 7 | 1 - 5 |
| Formaldehyde | 50 - 00 - 0 | * |
| Environmental and Special Hazard. | | |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|--------------|--------------|-------|
| Toluene | 108 - 88 - 3 | 1 - 5 |
| Formaldehyde | 50 - 00 - 0 | * |

* Trace = present at less than 0.01 percent.

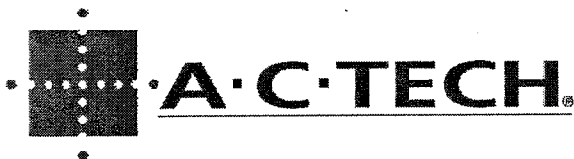
CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class D Division 2 Sub-division A Class D Division 2 Sub-division B

CEPA - NPRI

Aluminum, Toluene



Material Safety Data Sheet AC-[®] 632 Class B Base

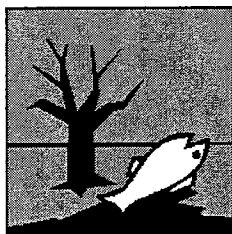
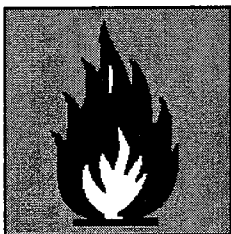
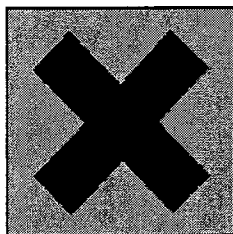
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European Union:

Preparation classification:

Harmful

Highly Flammable Dangerous for Environment



Contains:

601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- R 11 Highly flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 63 Possible risk of harm to the unborn child.
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - no smoking.
- S25 Avoid contact with eyes.
- S 36/37 Wear suitable protective clothing and gloves.
- S 60 This material and its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-------|----|---------------|---------------------------------------|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | |
|-------------------|-----------------------|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA |
|-------------------|-----------------------|

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |
|-----------------------------|---|---|-------|---|---|--------|---------|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|---------------------|-------|---|---|--------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|---------------------|-------|---|---|--------------|---|----|

| | | | | | |
|-------------|--------------------|---|-----------------|---|----|
| COMMON NAME | AC-645 Accelerator | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
|-------------|--------------------|---|-----------------|---|----|

| | | | |
|-------|----|--|----|
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGF) | 13 |
|-------|----|--|----|

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | |
|--------------------------------------|---|----|-----------------------|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | 18 |
|--------------------------------------|---|----|-----------------------|--|----|

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|----|----|---------------------|---|----|------------------|----|
| AVERAGE DAILY AMOUNT | 0.2 | 19 | MAXIMUM DAILY AMOUNT | 50 | 20 | ANNUAL WASTE AMOUNT | 1 | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|----|----|---------------------|---|----|------------------|----|

| | | | | | | | | |
|-------|---|----|--------------|----------|----|-------------------|----------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |
|-------|---|----|--------------|----------|----|-------------------|----------------|----|

| | | |
|--|---|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----------------------|---|--|------------|
| 1 50-60 ²⁹ | Manganese oxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1313-13-9 |
| 2 30-40 ²⁹ | Terphenyl hydrogenated | <input type="checkbox"/> Yes <input type="checkbox"/> No | 61788-32-7 |
| 3 15 ²⁹ | Terphenyl | <input type="checkbox"/> Yes <input type="checkbox"/> No | 2640-60-3 |
| 4 1-5 ²⁹ | Sodium hydroxide | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1310-73-2 |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

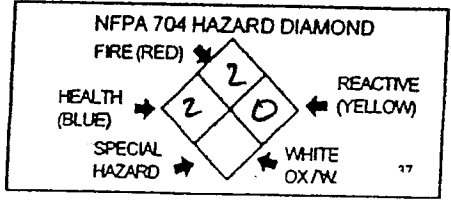
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

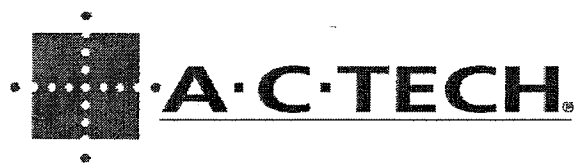
DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-645 Accelerator

MSDS No: 26452-04
Effective: 01/27/09
Supersedes: 11/18/05
Page: 1 of 5

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN# 834-100

Product ID: AC-645 Accelerator
Generic Description: Blend of metallic oxides
Product Use: Accelerator

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

ChemTrec Emergency
1 - 800 - 424 - 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 2* | 2 |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMMON NAME | CAS # | Approximate % (w/w) |
|---|-------------|---------------------|
| Manganese oxide | 1313-13-9 | 50 - 60 |
| Terphenyl, hydrogenated | 61788-32-7 | 30 - 40 |
| Terphenyl | 26140-60-3 | 1 - 5 |
| Sodium hydroxide | 1310-73-2 | 1 - 5 |
| Non-hazardous and other ingredients below reportable levels | Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. MAY CAUSE MODERATE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. MAY CAUSE SKIN IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: May cause moderate irritation.

SKIN CONTACT: May cause slight to mild irritation.

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and incoordination. Nausea, vomiting, and stomach upset can occur. Can cause wheezing, coughing, shortness of breath, and tightness in the chest.

INGESTION (Swallowing): Irritating to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea).

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Blood and/or blood-forming organs. Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|-------------------------|-------|------|-----|------|
| Manganese oxide | No | No | No | No |
| Terphenyl, hydrogenated | No | No | No | No |
| Terphenyl | No | No | No | No |
| Sodium hydroxide | No | No | No | No |



Material Safety Data Sheet AC-645 Accelerator

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally wash clothing and shoes before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

Flash Point.....: > 200F 93.3C Method.....: Not Applicable
Explosive Lmts: LEL(%) Not Determined UEL(%) Not Determined
Autoignition.....: Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Metallic oxides.

FIRE AND EXPLOSION HAZARDS: During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Sodium hydroxide

RQ = 1000 LB



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7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.

TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container can be hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|---|------|-------------------|
| Manganese oxide, Dusts and compounds, as Mn | 5 | mg/M ³ |
| Manganese oxide, Fume | 1 | mg/M ³ |
| Terphenyl, hydrogenated | 0.5 | ppm - Ceiling |
| Terphenyl | 0.53 | ppm - Ceiling |
| Sodium hydroxide | 2 | mg/M ³ |

OSHA - PEL

| | | |
|-------------------------|-----|-------------------|
| Manganese oxide, Fume | 1 | mg/M ³ |
| Terphenyl, hydrogenated | 0.5 | ppm |
| Terphenyl | 0.5 | ppm - Ceiling |
| Sodium hydroxide | 2 | mg/M ³ |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles or safety glasses with side shields. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------|-----------------|----------------------|-----------------------|
| Appearance.....: | Black | Odor.....: | Amine |
| Physical State.....: | Paste | Solubility.....: | Insoluble |
| pH.....: | Not Applicable | Evaporation Rate..: | < 1 (n-Butyl alcohol) |
| VOC Material.....: | Not Established | Specific Gravity...: | 1.9 |
| %Non-Vol. (w/w): | 100 | | |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet AC-645 Accelerator

MSDS No: 26452-04
Effective: 01/27/09
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Page: 4 of 5

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Manganese oxide:

Eye, skin, and respiratory tract irritant. Can cause liver and kidney injury.

Terphenyl, hydrogenated:

| | | | |
|-------------|--------|---------|-------|
| Oral LD50 | Rat | 17,500 | mg/kg |
| | Mouse | 12,500 | mg/kg |
| Dermal LD50 | Rabbit | > 2,000 | mg/kg |

Terphenyl:

| | | | |
|-----------|-----|--------|-------|
| Oral LD50 | Rat | 13,200 | mg/kg |
|-----------|-----|--------|-------|

Sodium hydroxide:

Corrosive! Causes eye and skin burns.

| | | | |
|-------------|--------|------|-------|
| Dermal LD50 | Rabbit | 1000 | mg/kg |
|-------------|--------|------|-------|

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with all local, state, and federal regulations.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
|-----------------|----------------|------------------|----------------|-----|
| | Non-regulated | Y | Y | |
| DOT Label.....: | Not applicable | UN/NA Id Num...: | Not Applicable | |



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15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- N - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals
Manganese oxide

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|-------------|---------|
| Manganese oxide | 1313-13-9 | 50 - 60 |
| Terphenyl, hydrogenated | 61788-32-7 | 30 - 40 |
| Terphenyl | 26140-60-3 | 1 - 5 |
| Sodium hydroxide | 1310-73-2 | 1 - 5 |
| Environmental Hazard. | | |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class D Division 2 Sub-division B

CEPA - NPRI

Manganese oxide

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|---------|---|
| CHEMICAL LOCATION | MATERIAL STORAGE AREA | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | G2 → G7 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | |
|---------------|---------------------|---|-----------------------------|---|---|-----------------|---|----|
| CHEMICAL NAME | Polysulfide Sealant | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | AC-665 Class C Base | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | | |

| | | | | | | | | | |
|--------------------------------------|-----------------------------------|--|-----------------------------------|----|-----------------------|---|---|--|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input checked="" type="checkbox"/> d. ACUTE HEALTH | <input checked="" type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | | |
|----------------------|-------------------------------------|--|---|----------------------------------|----|---------------------|----------|----|-------------------|----------------|----|
| AVERAGE DAILY AMOUNT | 15 | 19 | MAXIMUM DAILY AMOUNT | 3,000 | 20 | ANNUAL WASTE AMOUNT | 100 | 21 | STATE WASTE CODE | 22 | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 Gallon Drum | 25 |

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
|--|--|--|--|--|--|--|--|------------------------------------|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------|---|--|------------|
| 10-20 | Calcium carbonate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 471-34-1 |
| 5-10 | Calcium chromate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 13765-19-0 |
| 1-5 | Toluene | <input type="checkbox"/> Yes <input type="checkbox"/> No | 108-88-3 |
| <1 | Strontium chromate | <input type="checkbox"/> Yes <input type="checkbox"/> No | 7789-06-2 |
| | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

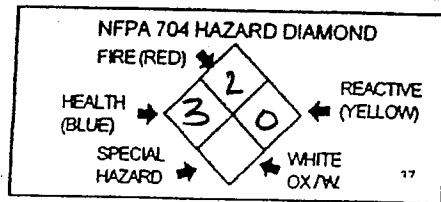
PLACARDING INFORMATION

UNDOT # LN 1866 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS 3 (DATA/CFR49) 3.3 (EMO)
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet AC-[®] 665 Class C Base

MSDS No: 36653-15
Effective: 01/27/09
Supersedes: 09/07/07
Page: 1 of 6

SIN #834-100

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-665 Class C Base
Generic Description: Polysulfide sealant
Product Use: Aircraft sealant

For information, contact:
Advanced Chemistry & Technology
7341 Anaconda Avenue
Garden Grove, CA 92841-2921
714 - 373 - 2837

| HAZARD RATINGS | | |
|----------------|-------------|------|
| | HMIS | NFPA |
| Health | 3* | 3 |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| | * = Chronic | |

ChemTrec Emergency
1 - 800 - 424 - 9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Calcium carbonate
Calcium chromate
Toluene
Strontium chromate
Non-hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|----------------|---------------------|
| 471 - 34 - 1 | 10 - 20 |
| 13765 - 19 - 0 | 5 - 10 |
| 108 - 88 - 3 | 1 - 5 |
| 7789 - 06 - 2 | <1 |
| Proprietary | Balance |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CAUSES SEVERE DIGESTIVE TRACT BURNS. COMBUSTIBLE LIQUID AND VAPOR (FLAMMABLE IF SHIPPED BY AIR/VESSEL). MAY CAUSE ALLERGIC SKIN REACTION AND SENSITIZATION. CAUSES SEVERE EYE IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND LOSS OF COORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND LOSS OF COORDINATION. MAY CAUSE MODERATE SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe irritation. Can cause burning sensation, tearing and redness.

SKIN CONTACT: Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis). May cause moderate irritation. May be harmful if absorbed through the skin. May cause allergic skin reactions and sensitization. Can cause redness, itching, and burning sensation.

INHALATION (Breathing): Irritating to the eyes, nose, and respiratory tract. Can cause dizziness, headaches, and loss of coordination. Nausea, vomiting, and stomach upset can occur.

INGESTION (Swallowing): Causes severe burns to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and loss of coordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Skin. Immune systems and/or specific chemical allergies. Nervous system.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|--------------------|-------|------|-----|------|
| Calcium carbonate | No | No | No | No |
| Calcium chromate | A1 | 1 | Yes | No |
| Toluene | No | No | No | No |
| Strontium chromate | A1 | 1 | Yes | No |



Material Safety Data Sheet AC-® 665 Class C Base

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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get prompt medical attention. Professionally wash clothing before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Seek medical attention. Immediately induce vomiting, as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|----------------------|-----------------|------------------------|------------------------|
| Flash Point.....: | 110F 43.3C | Method.....: | Setaflash Closed Cup |
| Explosive Lmts.....: | | LEL(%) Not Established | UEL(%) Not Established |
| Autoignition.....: | Not Established | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of sulfur. Hydrogen sulfide. Chromium compounds. Low molecular weight hydrocarbons.

FIRE AND EXPLOSION HAZARDS: During a fire, irritating and highly toxic gases may be generated during combustion or decomposition. High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

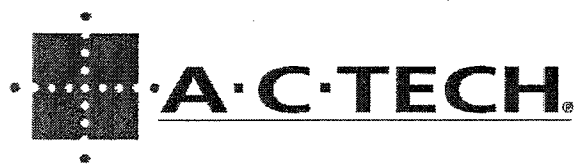
CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Calcium chromate
Toluene

RQ = 10 LB
RQ = 1000 LB



Material Safety Data Sheet

AC-® 665 Class C Base

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7. HANDLING AND STORAGE

Storage Temperature 75F 23.8C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. **WARNING:** Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face-shield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: **Attention!** This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

| | | |
|---|-----|------------------------------|
| Calcium carbonate | 10 | mg/M ³ Total dust |
| Calcium chromate Chromium (VI) insoluble cpds., as Cr | 1.0 | µg/M ³ |
| Toluene | 50 | ppm |
| Strontium chromate | 1.0 | µg/M ³ |

OSHA - PEL

| | | |
|---|-----|------------------------------|
| Calcium carbonate | 5 | mg/M ³ Resp. dust |
| Calcium chromate Chromium (VI) insoluble cpds., as Cr | 5.0 | µg/M ³ -Ceiling |
| Toluene | 100 | ppm |
| Strontium chromate Chromium (VI) insoluble cpds., as Cr | 5.0 | µg/M ³ -Ceiling |

OSHA - STEL

| | | |
|---------|-----|-----|
| Toluene | 150 | ppm |
|---------|-----|-----|

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: An eye wash facility should be readily available. Wear chemical splash goggles.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation. Neoprene gloves. Butyl rubber gloves. An emergency shower should be readily available.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Industrial hygiene consultation is recommended because airborne exposure levels vary depending on the nature of the operation performed. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134. Organic vapor respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------|----------------------|-------------------|-----------------|
| Appearance: | Yellow, pale | Odor: | Mercaptan |
| Physical State: | Paste | Solubility: | Insoluble |
| pH: | Not Applicable | Vapor Pressure: | Not Established |
| Vapor Density: | Not Established | Evaporation Rate: | Not Established |
| VOC Material: | 48 g/L 0.4 lbs./gal. | %Non-Vol(w/w): | 95 |
| Specific Gravity: | 1.46 g/cc | Wt(lbs)/gal: | 12.1 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.



Material Safety Data Sheet

AC-® 665 Class C Base

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Reducers. Strong bases. Acids. Peroxides.

11. TOXICITY INFORMATION

COMPONENTS:

Calcium carbonate:

Repeated exposure to dusts can lead to particulate deposition in the lungs (i.e., pneumoconiosis).

Calcium chromate:

Can cause liver and kidney injury. Penetrating slow healing ulcers may occur after contact with non-intact skin or mucous membranes. Chromate dusts have been shown to cause lung and other cancers in humans and laboratory animals. Possible skin and respiratory sensitizer. The calcium chromate is fully encapsulated so there is no dust.

Toluene:

| | | | |
|-----------------|--------|--------|-------------|
| Oral LD50 | Rat | 5,000 | mg/kg |
| Dermal LD50 | Rabbit | 12,124 | mg/kg |
| Inhalation LC50 | Mouse | 5,320 | ppm/8-Hours |

Strontium chromate:

Can cause liver and kidney injury. Possible skin and respiratory sensitizer. Penetrating slow healing ulcers may occur after contact with non-intact skin or mucous membranes. Chromate dusts have been shown to cause lung and other cancers in humans and laboratory animals. The strontium chromate is fully encapsulated so there is no dust.

| | | | |
|-----------|-----|-------|-------|
| Oral LD50 | Rat | 3,118 | mg/kg |
|-----------|-----|-------|-------|

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: The toxicity characteristic (TC) has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP). When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------------|--|-------------------|---------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| < 133 | Resin solution | Y | Y | Y |
| ≥ 133 | RQ Resin solution (strontium chromate, calcium chromate) | Y | Y | Y |
| DOT Label..... | Flammable Liquid | UN/NA Id Num.: | UN 1866 | |
| Hazard Class..... | 3 (IATA/49CFR) 3.3 (IMO) | USPS Mailability: | No | |
| Packing Group..... | III | | | |



Material Safety Data Sheet
AC-® 665 Class C Base

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Supercedes: 09/07/07
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15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire Hazard
- N - Sudden Release of Pressure Hazard
- N - Reactivity Hazard
- Y - Immediate (acute) Health Hazard
- Y - Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat
 Formaldehyde

SARA Section 313 Toxic Chemicals
 Calcium chromate
 Chromium compounds
 Toluene
 Strontium chromate
 Chromium compounds

TSCA Section 8(d) Data Reporting Rule
 Toluene

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
 Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

| | | |
|--|----------------|---------|
| Calcium carbonate | 471 - 34 - 1 | 10 - 20 |
| Calcium chromate | 13765 - 19 - 0 | 5 - 10 |
| Environmental and Special Hazard. | | |
| Toluene | 108 - 88 - 3 | 1 - 5 |
| Environmental Hazard. | | |
| Strontium chromate | 7789 - 06 - 2 | <1 |
| Environmental and Special Hazard. | | |
| Non-hazardous trade secret ingredient(s) | Proprietary | Balance |

California - California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

| | | |
|----------------------|----------------|---------|
| Calcium chromate | 13765 - 19 - 0 | 5 - 10 |
| Cancer Hazard. | | |
| Toluene | 108 - 88 - 3 | 1 - 5 |
| Reproductive Hazard. | | |
| Strontium chromate | 7789 - 06 - 2 | <1 |
| Cancer Hazard. | | |
| Formaldehyde | 50 - 00 - 0 | < 0.01* |
| Cancer Hazard. | | |

* Trace = present at less than 0.01 percent.

CONEG - No data available.



Material Safety Data Sheet AC-[®] 665 Class C Base

MSDS No: 36653-15
Effective: 01/27/09
Supercedes: 09/07/07
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CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 3
Class D Division 2 Sub-division B

CEPA - NPRI

Calcium chromate
Chromium compounds
Toluene
Strontium chromate
Chromium compounds

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CHEMICAL LOCATION | Raw Material Storage | | | | | 4 | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J5 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|----------------------|-------|--|-----------------|--|---|---|
| CHEMICAL NAME | ACETIC ACID, GLACIAL | WASTE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | SAME | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | *If EHS is "Yes", all amounts must be LBS |
| CAS # | 64-19-7 | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | |

| | | | | | | | | | |
|--------------------------------------|---|---|-----------------------------------|----|-----------------------|---|--|--|----|
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE | <input type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID | <input checked="" type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | |

| | | | | | | | | | | |
|----------------------|---|--|----------------------|------------------------------------|----------|---------------------|-------------------|---------------|------------------|----|
| AVERAGE DAILY AMOUNT | 3 | 19 | MAXIMUM DAILY AMOUNT | 10 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 2.5 ML BOTTLE | 25 | |
| | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | | *If EHS, amount must be in pounds. | | | | | | |

| | | | | | | |
|--|--|--|--|--|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> i. VAT | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> q. TANK WAGON | 26 |
| | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> j. FIBER DRUM | <input checked="" type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> r. RAIL CAR | |
| | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> s. TOTE BIN | |
| | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> t. OTHER | |

| | | | | | |
|---------------------|--|---|---|---------------------------------------|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

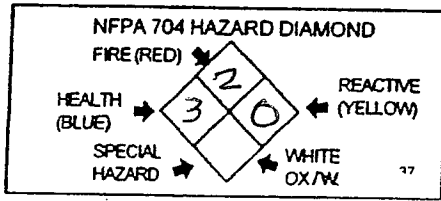
PLACARDING INFORMATION

UNDOT # UN 2789 33
 Refer to shipping papers or MSDS

DOT HAZARD CLASS 8 34
 Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
 If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

Material Safety Data Sheet

Acetic Acid, Glacial, GR



Section 1. Product and Company Identification

Product name : Acetic Acid, Glacial, GR
Product code : AX0073
Synonym : ACETIC ACID, GLACIAL ; ETHANOIC ACID
Material uses : Other non-specified industry: Analytical reagent.
Manufacturer : EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
856-423-6300 Technical Service
Monday - Friday: 8:00 - 5:00 PM
Validation date : 7/10/2006.
Print date : 7/12/2006.
In case of emergency : 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state : Liquid. (Colorless.)
Odor : Pungent.
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview : DANGER!
POISON!
MAY BE FATAL IF SWALLOWED.
CAUSES EYE AND SKIN BURNS.
HARMFUL IF INHALED.
CAUSES RESPIRATORY TRACT IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA, TEETH.
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
Do not ingest. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry : Dermal contact. Inhalation. Ingestion.
Potential acute health effects
Eyes : Corrosive to eyes.
Skin : Corrosive to the skin.
Inhalation : Toxic by inhalation. Irritating to respiratory system.
Ingestion : Very toxic if swallowed. May cause burns to mouth, throat and stomach.
Carcinogenic effects : No known significant effects or critical hazards.
Mutagenic effects : No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

Continued on Next Page

Section 3. Composition/Information on Ingredients

United States

| Name | CAS number | % by Weight |
|-------------|------------|-------------|
| Acetic Acid | 64-19-7 | 100 |

Section 4. First Aid Measures

- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing or wear gloves.

Section 5. Fire Fighting Measures

- Flammability of the product** : Flammable liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Products of combustion** : These products are carbon oxides (CO, CO₂).
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Not available.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Vapor may travel a considerable distance to source of ignition and flash back.

Section 6. Accidental Release Measures

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Section 7. Handling and Storage

- Handling** : Do not ingest. Do not get in eyes or on skin or clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls/Personal Protection

Product name

Exposure limits

United States

Acetic Acid

ACGIH TLV (United States, 1/2006).

STEL: 37 mg/m³ 15 minute/minutes. Form: All forms

STEL: 15 ppm 15 minute/minutes. Form: All forms

TWA: 25 mg/m³ 8 hour/hours. Form: All forms

TWA: 10 ppm 8 hour/hours. Form: All forms

NIOSH REL (United States, 12/2001).

STEL: 37 mg/m³ 15 minute/minutes. Form: All forms

STEL: 15 ppm 15 minute/minutes. Form: All forms

TWA: 25 mg/m³ 10 hour/hours. Form: All forms

TWA: 10 ppm 10 hour/hours. Form: All forms

OSHA PEL (United States, 8/1997).

TWA: 25 mg/m³ 8 hour/hours. Form: All forms

TWA: 10 ppm 8 hour/hours. Form: All forms

OSHA PEL 1989 (United States, 3/1989).

TWA: 25 mg/m³ 8 hour/hours. Form: All forms

TWA: 10 ppm 8 hour/hours. Form: All forms

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Personal protection

Eyes

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Recommended: splash goggles, face shield

Continued on Next Page

Section 8. Exposure Controls/Personal Protection

| | |
|------------------|---|
| Skin | : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Body: Recommended: safety apron |
| Respiratory | : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. |
| Hands | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: neoprene |
| Hygiene measures | : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. |

Section 9. Physical and Chemical Properties

| | |
|----------------------------|--|
| Physical state | : Liquid. (Colorless.) |
| Flash point | : Closed cup: 39.85°C (103.7°F). |
| Auto-ignition temperature | : 425.85 to 462.85°C (798.5 to 865.1°F) |
| Flammable limits | : Lower: 4% Upper: 19.9% |
| Color | : Clear. |
| Odor | : Pungent. |
| Molecular weight | : 60.06 g/mole |
| Molecular formula | : C ₂ H ₄ O ₂ |
| Boiling/condensation point | : 117.78°C (244°F) |
| Melting/freezing point | : 16.67°C (62°F) |
| Relative density | : 1.051 (Water = 1) |
| Vapor density | : 2.1 (Air = 1) |
| Odor threshold | : 1 ppm |
| Evaporation rate | : 1.34 compared with(n-BUTYL ACETATE=1) |

Section 10. Stability and Reactivity

| | |
|---|--|
| Stability and reactivity | : The product is stable. |
| Incompatibility with various substances | : Reactive or incompatible with the following materials: oxidizing materials, metals and alkalis. |
| Hazardous decomposition products | : carbon oxides (CO, CO ₂) |
| Hazardous polymerization | : Will not occur. |
| Conditions of reactivity | : Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials. Vapor may travel a considerable distance to source of ignition and flash back. Highly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials. |

Section 11. Toxicological Information

Toxicity data

United States

| <u>Product/ingredient name</u> | <u>Test</u> | <u>Result</u> | <u>Route</u> | <u>Species</u> |
|--------------------------------|-------------|-------------------------|--------------|----------------|
| Acetic Acid | LD50 | 3310 mg/kg | Oral | Rat |
| | LD50 | 4960 mg/kg | Oral | Mammal |
| | LD50 | 1060 mg/kg | Dermal | Mammal |
| | LDLo | 600 mg/kg | Oral | Rabbit |
| | LDLo | 600 mg/kg | Oral | Rabbit |
| | LC50 | 5620 ppm (1 hour/hours) | Inhalation | Muskrat |

Chronic effects on humans : Causes damage to the following organs: upper respiratory tract, skin, eye, lens or cornea, teeth.

Other toxic effects on humans : Extremely hazardous in case of skin contact (corrosive), of eye contact (corrosive), of ingestion, of inhalation (lung corrosive).
Very hazardous in case of inhalation (lung irritant).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Sensitization

Ingestion : May cause burns to mouth, throat and stomach.

Inhalation : Irritating to respiratory system.

Eyes : Corrosive to eyes.

Skin : Corrosive to the skin.

Section 12. Ecological Information

Ecotoxicity data

United States

| <u>Product/ingredient name</u> | <u>Species</u> | <u>Period</u> | <u>Result</u> |
|--------------------------------|----------------------------|---------------|---------------|
| Acetic Acid | Daphnia magna (EC50) | 48 hour/hours | 65 mg/l |
| | Lepomis macrochirus (LC50) | 96 hour/hours | 75 mg/l |
| | Pimephales promelas (LC50) | 96 hour/hours | 79 mg/l |
| | Pimephales promelas (LC50) | 96 hour/hours | 88 mg/l |

Environmental precautions : No known significant effects or critical hazards.

Products of degradation : These products are carbon oxides (CO, CO₂) and water.

Toxicity of the products of biodegradation : The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.


The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Continued on Next Page

Section 13. Disposal Considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport Information

| Regulatory information | UN number | Proper shipping name | Class | PG* | Label | Additional information |
|------------------------|-----------|----------------------|-------|-----|--|---|
| DOT Classification | UN2789 | ACETIC ACID, GLACIAL | 8 | II |  | Reportable quantity 5000 lbs. (2268 kg) |

PG* : Packing group

Section 15. Regulatory Information

United States

- HCS Classification** : Combustible liquid
Highly toxic material
Corrosive material
Target organ effects
- U.S. Federal regulations** : TSCA 8(b) inventory: Listed
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Acetic Acid
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Acetic Acid
: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Acetic Acid
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
- State regulations** : Pennsylvania RTK: Acetic Acid : (environmental hazard, generic environmental hazard)
Massachusetts RTK: Acetic Acid
New Jersey: Acetic Acid

Canada

- WHMIS (Canada)** : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class E: Corrosive material
- CEPA DSL/CEPA NDSL** : CEPA DSL: Acetic Acid

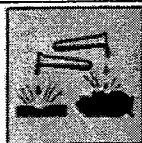
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Continued on Next Page

Section 15. Regulatory Information

Hazard symbol/symbols :



Risk phrases : R10- Flammable.
R35- Causes severe burns.

Safety phrases : S1/2- Keep locked up and out of the reach of children.
S23- Do not breathe [***].
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

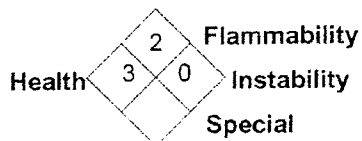
International regulations

International lists : Australia (NICNAS): Acetic Acid
China: Acetic Acid
Germany water class: Acetic Acid
Japan (METI): Acetic Acid
Korea (TCCL): Acetic Acid
Philippines (RA6969): Acetic Acid

Section 16. Other Information

Label requirements : DANGER!
POISON!
MAY BE FATAL IF SWALLOWED.
CAUSES EYE AND SKIN BURNS.
HARMFUL IF INHALED.
CAUSES RESPIRATORY TRACT IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA, TEETH.
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.

National Fire Protection Association (U.S.A.) :



Notice to reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

FACILITY ID# 3 0 0 3 5 38 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.** 3

I. FACILITY INFORMATION

CHEMICAL LOCATION **Material Storage Area** 4
CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # **1** 6 GRID # **G2-G7** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **AC-130 PART A** WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME **GLACIAL ACETIC ACID** 9 An EHS Chemical Yes No 12
CAS # **64-19-7** 10 FIRE CODE HAZARD CLASSES (supplied by GGF) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **10** 19 MAXIMUM DAILY AMOUNT **100** 20 ANNUAL WASTE AMOUNT **NONE** 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **10 lb container** 25
 c. POUNDS d. TONS
*If EHS, amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|---|-------|
| 1 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 2 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 3 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 4 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 5 | 29 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

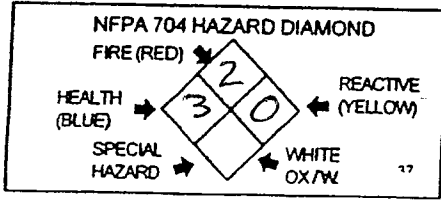
PLACARDING INFORMATION

UNDOT # **UN 2789** 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS **8** 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



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Material Safety Data Sheet AC-[®] 130 Part A

MSDS No: 11300-03
Effective: 01/26/09
Supercedes: 05/02/05
Page: 1 of 5

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN # 834-100

Product ID: AC-130 Part A

Generic Description: Acetic Acid

Product Use: Adhesion Promoter

For customer service/technical information, contact:
Advanced Chemistry & Technology, Inc.
7341 Anaconda Ave.
Garden Grove CA 92841 – 2921
714 – 373 – 2837

ChemTrec Emergency

1 – 800 – 424 – 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 3* | 3* |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME

Glacial Acetic Acid

Non – hazardous and other ingredients below reportable levels

CAS

64-19-7

Proprietary

Approximate % (w/w)

100

Balance

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! FLAMMABLE AND CORROSIVE LIQUID AND VAPOR. MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. CORROSIVE. LACHRYMATOR. CAUSES SEVERE EYE AND SKIN BURNS. CAUSES SEVERE DIGESTIVE AND RESPIRATORY TRACT BURNS. MAY CAUSE SKIN SENSITIZATION BY SKIN CONTACT. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe eye irritation. May cause corneal opacity (clouding of the eye surface). Contact with liquid or vapor causes severe burns and possible irreversible eye damage. Lachrymator.

SKIN CONTACT: Causes skin burns. May cause skin sensitization. May be harmful if absorbed through the skin. Contact with the skin may cause blackening and hyperkeratosis of the skin of the hands.

INHALATION (Breathing): Effects may be delayed. Causes chemical burns to the respiratory tract. Exposure may lead to bronchitis, pharyngitis, and dental erosion. May be absorbed through the lungs.

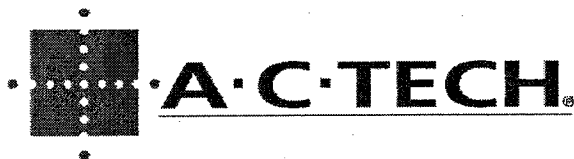
INGESTION (Swallowing): May cause severe and permanent damage to the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause polyuria, oliguria and anuria. Rapidly absorbed from the gastrointestinal tract.

TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---------------------|-------|------|-----|------|
| Glacial Acetic Acid | N | N | N | N |



Material Safety Data Sheet AC-® 130 Part A

MSDS No: 11300-03
Effective: 01/26/09
Supercedes: 05/02/05
Page: 2 of 5

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 30 minutes. Get medical attention immediately.

SKIN CONTACT: Immediately flush with water for 15 minutes. Remove contaminated clothing and shoes. Get medical attention immediately. Professionally wash clothing before re-use. Destroy contaminated shoes

INHALATION (Breathing): Get medical attention immediately. Remove to fresh air. If breathing is difficult, give oxygen. Do not give mouth-to-mouth respiration. If not breathing, give artificial respiration using oxygen or mechanical devices.

INGESTION (Swallowing): Seek medical attention. DO NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|----------------|---------|------------|
| Flash Point: | 39°C (102.2°F) | Method: | Closed cup |
| Explosive Limits: | LEL(%) 4.0 | UEL(%) | 19.9 |
| Autoignition: | 426°C | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH – approved positive pressure self – contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN – UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self – contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non – sparking tools and/or explosion – proof equipment. Stop ignition sources. Use dry soda ash or calcium carbonate to cover material and place in closed chemical waste containers. Wash area with soap and water. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 – 800 – 424 – 8802) and to the appropriate state and local emergency response organizations.



Material Safety Data Sheet AC-[®] 130 Part A

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RQ= 5000 lbs.

7. HANDLING AND STORAGE

Storage Temperature: between 62° - 102°F / 17° - 39°C

STORAGE CONDITIONS: Store in cool, dry, well-ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles face shield, and gloves. Professionally launder contaminated clothing before re-using.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

| | | |
|--------------|----|------|
| ACGIH – TLV | | |
| Acetic acid | 10 | ppm. |
| ACGIH – STEL | | |
| Acetic acid | 15 | ppm |
| OSHA – PEL | | |
| Acetic acid | 10 | ppm |
| OSHA – TWA | | |
| Acetic Acid | 25 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA – approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------|----------------------------|-------------------|----------|
| Appearance | Clear colorless | Odor | Pungent |
| Physical State | Liquid | Solubility | Complete |
| pH | 2.4 | VOC Material, g/l | 1050 |
| Specific Gravity | 1.05 | % Non – Vol(w/w) | 0.1 |
| Vapor Pressure | 11.4 mm Hg | Vapor Density | 2.11 |
| Evaporation Rate | 0.97 (butyl acetate = 1.0) | | |



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NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: May occur.

CONDITIONS TO AVOID: High temperatures, and incompatible materials.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Bases both organic and inorganic.

11. TOXICITY INFORMATION

COMPONENTS:

Acetic Acid

| | | |
|----------|-------------------------|-----------------|
| LD/LC 50 | Inhalation, Mouse, LC50 | 5620 ppm/1 hour |
| | Oral, Rat, LD50 | 3310 mg/kg |
| | Skin, Rabbit, LD50 | 1060 mg/kg |

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------|----------------------|-----------------|--------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Acetic Acid, Glacial | Y | Y | Y |
| DOT Label | Acetic Acid, Glacial | UN/NA Id Number | UN2789 | |
| Hazard Class | 8 | Packing Group | II | |

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire
- N - Pressure
- N - Reactivity
- Y - Acute



Material Safety Data Sheet AC-[®] 130 Part A

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Y - Chronic

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals-None

TSCA Section 12(b) Export Notification-None

TSCA Section 8(d) Data Reporting Rule-None

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

| | |
|---------------|-----------------------------|
| United States | Toxic Substance Control Act |
| Europe | EINECS |
| Canada | DSL/NDSL |

Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT - TO - KNOW:

Pennsylvania - New Jersey R - T - K

COMMON NAME

Acetic Acid, Glacial

Non - hazardous and other ingredients below reportable levels

| CAS # | Approximate % (w/w) |
|-------------|---------------------|
| 64-19-7 | 100 |
| Proprietary | Balance |

California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Class B Division 3 Class E Class D Division 2 Sub - division A

CEPA - NPRI

16. OTHER INFORMATION

USER RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made thereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 30035 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.**

I. FACILITY INFORMATION

CHEMICAL LOCATION **Material Storage Area**
CONFIDENTIAL LOCATION EPCRA Yes No MAP # 1 GRID # **G-2-G7**

II. CHEMICAL INFORMATION

CHEMICAL NAME **AC-131 Part A** WASTE Yes No TRADE SECRET Yes No
COMMON NAME **Same** An EHS Chemical Yes No
CAS # **64-19-7** FIRE CODE HAZARD CLASSES (supplied by GGFDF)

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE RADIOACTIVE Yes No CURIES

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **10** MAXIMUM DAILY AMOUNT **100** ANNUAL WASTE AMOUNT **None** STATE WASTE CODE

UNITS a. GALLONS b. CUBIC FEET c. POUNDS d. TONS DAYS ON SITE **365 DAYS** LARGEST CONTAINER **10 lb Container**

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK b. UNDERGROUND TANK c. TANK INSIDE BLDG d. STEEL DRUM
 e. PLASTIC DRUM f. NONMETALLIC DRUM g. METAL CONTAINER h. CARBOY
 i. VAT j. FIBER DRUM k. BAG(S) l. BOX(S)
 m. CYLINDER n. GLASS CONTAINER o. PLASTIC CONTAINER p. IN MACH OR EQUIP
 q. TANK WAGON r. RAIL CAR s. TOTE BIN t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|---|----------------|
| 100 | Glacial Acid Acid | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 64-19-7 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

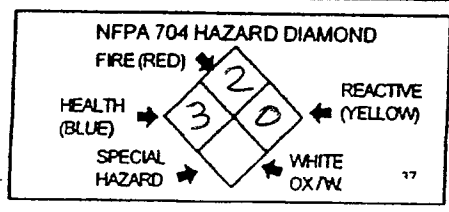
PLACARDING INFORMATION

UNDOT # **UN 2789** Refer to shipping papers or MSDS

DOT HAZARD CLASS **8** Refer to shipping papers or MSDS

EPCRA YES NO

X If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet

AC-[®] 131 Part A (4-Part Kit)

MSDS No: 11310-02
Effective: 01/26/09
Supercedes: 11/18/05
Page: 1 of 5

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

SIN # 834-100

Product ID: AC-131 Part A

Generic Description: Acetic Acid

Product Use: Paint Surface Preparation

For customer service/technical information, contact:
Advanced Chemistry & Technology, Inc.
7341 Anaconda Ave.
Garden Grove CA 92841 – 2921
714 – 373 – 2837

ChemTrec Emergency

1 – 800 – 424 – 9300

| HAZARD RATINGS | | |
|----------------|------|------|
| | HMIS | NFPA |
| Health | 3* | 3* |
| Fire | 2 | 2 |
| Reactivity | 0 | 0 |
| * = Chronic | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
Glacial Acetic Acid
Non – hazardous and other ingredients below reportable levels

CAS # Approximate % (w/w)
64-19-7 100
Proprietary Balance

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! FLAMMABLE LIQUID AND VAPOR. MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. CORROSIVE. LACHRYMATOR. MUTAGEN. CAUSES SEVERE EYE AND SKIN BURNS. CAUSES SEVERE DIGESTIVE AND RESPIRATORY TRACT BURNS. MAY CAUSE REPRODUCTIVE AND FETAL EFFECTS. MAY CAUSE SKIN SENSITIZATION BY SKIN CONTACT. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe eye irritation. May cause corneal opacity (clouding of the eye surface). Contact with liquid or vapor causes severe burns and possible irreversible eye damage. Lachrymator.

SKIN CONTACT: Causes skin burns. May cause skin sensitization. May be harmful if absorbed through the skin. Contact with the skin may cause blackening and hyperkeratosis of the skin of the hands.

INHALATION (Breathing): Effects may be delayed. Causes chemical burns to the respiratory tract. Exposure may lead to bronchitis, pharyngitis, and dental erosion. May be absorbed through the lungs.

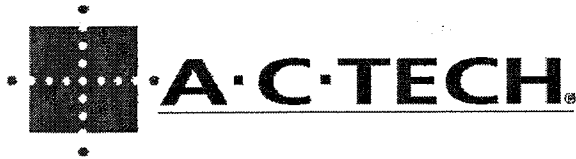
INGESTION (Swallowing): May cause severe and permanent damage to the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause polyuria, oliguria and anuria. Rapidly absorbed from the gastrointestinal tract.

TARGET ORGANS/CHRONIC EFFECTS: Lungs and respiratory system. Eyes. Skin.

CONDITIONS AGGRAVATED BY EXPOSURE: Lungs and respiratory system. Skin.

CARCINOGENICITY:

| | ACGIH | IARC | NTP | OSHA |
|---------------------|-------|------|-----|------|
| Glacial Acetic Acid | N | N | N | N |



Material Safety Data Sheet

AC-[®] 131 Part A (4-Part Kit)

MSDS No: 11310-02
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Supersedes: 11/18/05
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4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 30 minutes. Get medical attention immediately.

SKIN CONTACT: Immediately flush with water for 15 minutes. Remove contaminated clothing and shoes. Get medical attention immediately. Professionally wash clothing before re-use. Destroy contaminated shoes

INHALATION (Breathing): Get medical attention immediately. Remove to fresh air. If breathing is difficult, give oxygen. Do not give mouth-to-mouth respiration. If not breathing, give artificial respiration using oxygen or mechanical devices.

INGESTION (Swallowing): Seek medical attention. DO NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIRE FIGHTING METHODS

| | | | |
|-------------------|----------------|---------|------------|
| Flash Point: | 39°C (102.2°F) | Method: | Closed cup |
| Explosive Limits: | LEL(%) 4.0 | UEL(%) | 19.9 |
| Autoignition: | 426°C | | |

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. Vapors can travel to a source of ignition (flame, electric motor, hot surface, cigarette, etc.) and flash back. During a fire, irritating and highly toxic gases may be generated during combustion or decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, halon, water spray, or foam. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH – approved positive pressure self – contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN – UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self – contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non – sparking tools and/or explosion – proof equipment. Stop ignition sources. Use dry soda ash or calcium carbonate to cover material and place in closed chemical waste containers. Wash area with soap and water. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a component's RQ must be reported to the National Response Center (1 – 800 – 424 – 8802) and to the appropriate state and local emergency response organizations.
RQ= 5000 lbs.



Material Safety Data Sheet
AC-® 131 Part A (4-Part Kit)

MSDS No: 11310-02
Effective: 01/26/09
Supercedes: 11/18/05
Page: 3 of 5

7. HANDLING AND STORAGE

Storage Temperature: between 62° - 102°F/ 17° - 39°C

STORAGE CONDITIONS: Store in cool, dry, well-ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non – sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using rest room facilities. Wash contaminated goggles face shield, and gloves. Professionally launder contaminated clothing before re – using.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

| | | | |
|--------------|--|----|------|
| ACGIH – TLV | | | |
| Acetic acid | | 10 | ppm. |
| ACGIH – STEL | | | |
| Acetic acid | | 15 | ppm |
| OSHA – PEL | | | |
| Acetic acid | | 10 | ppm |
| OSHA – TWA | | | |
| Acetic Acid | | 25 | ppm |

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles. An eye wash facility should be readily available.

SKIN PROTECTION: Wear protective clothing and appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA – approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self – contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------|----------------------------|------------------|----------|
| Appearance | Clear colorless | Odor | Pungent |
| Physical State | Liquid | Solubility | Complete |
| pH | 2.4 | VOC Material | 1050 |
| Specific Gravity | 1.05 | % Non – Vol(w/w) | 0.1 |
| Vapor Pressure | 11.4 mm Hg | Vapor Density | 2.11 |
| Evaporation Rate | 0.97 (butyl acetate = 1.0) | | |



Material Safety Data Sheet

AC-[®] 131 Part A (4-Part Kit)

MSDS No: 11310-02
Effective: 01/26/09
Supersedes: 11/18/05
Page: 4 of 5

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: May occur.

CONDITIONS TO AVOID: High temperatures, and incompatible materials.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Bases both organic and inorganic.

11. TOXICITY INFORMATION

COMPONENTS:
Acetic Acid

| | | |
|----------|-------------------------|----------------|
| LD/LC 50 | Inhalation, Mouse, LC50 | 5620 ppm/1hour |
| | Oral, Rat, LD50 | 3310 mg/kg |
| | Skin, Rabbit, LD50 | 1060 mg/kg |

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

| | | | | |
|--------------|----------------------|-----------------|--------|-----|
| Weight (lb.) | Shipping Name | 49 CFR | IATA | IMO |
| | Acetic Acid, Glacial | Y | Y | Y |
| DOT Label | Acetic Acid, Glacial | UN/NA Id Number | UN2789 | |
| Hazard Class | 8 | Packing Group | II | |

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:

- Y - Fire
- N - Pressure
- N - Reactivity



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 30035 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.**

I. FACILITY INFORMATION

CHEMICAL LOCATION **RAW MATERIAL STORAGE**
CONFIDENTIAL LOCATION Yes No 5 MAP # 4 GRID # **J5**

II. CHEMICAL INFORMATION

CHEMICAL NAME **MANGANESE DIOXIDE, ACTIVATED** WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME **MANGANESE DIOXIDE** An EHS Chemical Yes No 12
CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGF) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16
PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **1000** 19 MAXIMUM DAILY AMOUNT **3000** 20 ANNUAL WASTE AMOUNT **NONE** 21 STATE WASTE CODE 22
UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **250 LB DRUM** 25
 c. POUNDS d. TONS
*If EHS, amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|---|---------------------|
| 1 | 792 MANGANESE DIOXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 1313-13-9 32 |
| 2 | 43 SODIUM HYDROXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 1310-73-2 32 |
| 3 | 3 WATER | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 7732-18-5 32 |
| 4 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

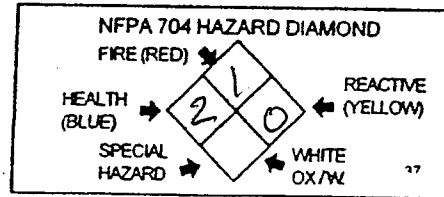
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

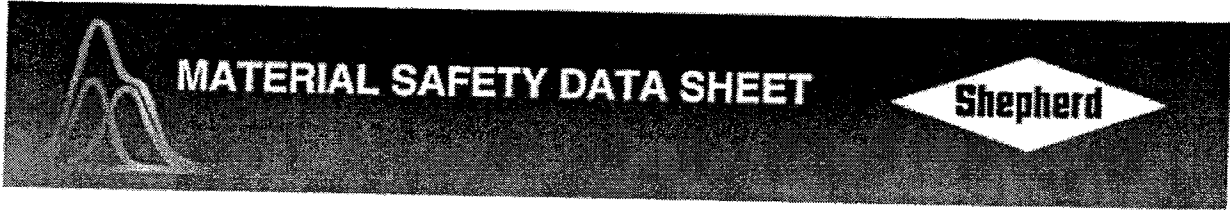
DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



1. Product Name: Manganese Dioxide, Activated High Moisture

Revision # 1

Date: 12-Jan-2000

Company: The Shepherd Color Company
 4539 Dues Drive
 Cincinnati, Ohio 45246
 U.S.A.

Shepherd Color International
 Nieuwstraat 28
 3360 Korbeek-Lo
 Belgium

Shepherd Color International
 1st Floor, 479 Warrigal Rd
 Moorabbin, Victoria 3189
 Australia

Telephone: U.S.A. Office: 513-874-0714
 Belgium Office: 011-32-1-646-8888

Emergency information: Telephone: U.S.A. 513-874-0714

2. Composition/Information on Ingredients

| Ingredients: | CAS No: | EINECS | % Weight (Typical) |
|------------------------------|-----------|-----------|--------------------|
| Manganese dioxide, activated | 1313-13-9 | 215-202-6 | >92 |
| Sodium Hydroxide Flake | 1310-73-2 | 215-185-5 | <3 |
| Water | 7732-18-5 | | 3 |

Synonyms: MN0000W - MANGANESE DIOXIDE * WET

| As Regulated (Related Exposure Limits) | OSHA PEL (mg/m³) | ACGIH TLV (mg/m³) | %Metal (Typical) | Sara |
|--|------------------|-------------------|------------------|------|
| Manganese compounds (as Mn) | 5 Ceiling | 0.2 | 58 | Yes |
| Sodium hydroxide | 2 Ceiling | 2 Ceiling | <3 | No |

3. Hazards Identification

EEC Risk Phrases: R 20/22 Harmful by inhalation and if swallowed. S(2-) 25
 EEC Safety Phrases:
 Methods for Cleanup: See Section XI for Toxicological Information.

4. First Aid Measures

If inhaled: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
 On ingestion: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call a physician.
 On contact with eyes: On contact with eyes flush eyes with plenty of water for at least fifteen (15) minutes. Call a physician.
 On skin contact: On skin contact, wash thoroughly with soap and water.

5. Fire Fighting Measures

Suitable extinguishing media: Foam, CO₂, dry chemical fire extinguisher or water spray.
 Unsuitable extinguishing media: Not applicable
 Emitted when burned: Not applicable
 Special protective equipment: Use appropriate techniques for fighting surrounding fire.
 Further information: May spark, smolder and/or ignite when rubbed or heated with easily oxidized materials.

6. Accidental Release Measures

Personal precautions: Maintain appropriate dust control.
 Environmental precautions: Prevent contamination of soils, drains and surface water.
 Methods for cleanup: Transfer material into closed container for re-use or disposal.

7. Handling and Storage

Handling: Good housekeeping procedures should be followed to prevent dust during processing. Do not eat, drink or smoke in work areas. Wash thoroughly with soap and water after handling. Provide eye wash stations in areas of handling.
 Storage: Store material in a closed container. Normal warehousing.

8. Exposure Controls and Personal Protection

Engineering controls/measures: Use mechanical ventilation to keep dust below regulatory standards (see Section II). Design criteria usually cannot be specified in an MSDS because of its complexity.
 Personal Protective Equipment:
 Respiratory protection: MSHA/NIOSH respirators approved for dusts TC-21C or NIOSH approved cartridges for Non-oil aerosols, N95, N99, N100 (42 CFR 84).
 Hand protection: Rubber, PVC coated gloves, impermeable.
 Eye protection: Safety Glasses with side shields, mono goggles.
 Body protection: No special precautions (see hand protection).
 General safety and hygiene measures: Good housekeeping procedures should be followed to prevent dust during processing.

9. Physical and Chemical Properties

| | |
|--|-------------------|
| Appearance: | Fine Black Powder |
| Odor: | No Odor |
| Melting point/melting range: | Not Applicable |
| Boiling point/boiling range: | Not Applicable |
| Flash point: | Not Applicable |
| Combustibility: | None: |
| Explosion limits: | |
| Lower Vol. %: | Not Applicable |
| Upper Vol. %: | Not Applicable |
| Ignition temperature: | Not Applicable |
| Self-ignition: | Not Applicable |
| Self-ignition temperature: | Not Applicable |
| Explosion hazard: | Not Applicable |
| Fire promoting properties: | Not Applicable |
| Vapor pressure: | Not Applicable |
| Specific gravity: | 4.4 (6) |
| Bulk density: | No data available |
| Packing density: | No data available |
| Solubility in Water: | Negligible |
| Solubility in other solvents: | Negligible |
| pH value: | No data available |
| Octanol/water partition coefficient (log POW): | Not Applicable |
| Viscosity: | Not Applicable |
| Other information: | Not Applicable |

10. Stability and Reactivity

| | |
|-----------------------------------|---------------------------|
| Conditions to avoid: | None known |
| Materials to avoid: | Easily oxidized materials |
| Hazardous reactions: | None known |
| Hazardous decomposition products: | None known |

11. Toxicological Information

Acute Toxicity

| | |
|--|-------------------|
| LD50/oral/rat: | 14,900 mg/kg (5) |
| LD50/inhal/rat: | Not Tested |
| Sensitizing: | None expected |
| Primary skin irritation/rabbit: | No data available |
| Primary mucous membrane irritation/rabbit' eyes: | No data available |

ADDITIONAL INFORMATION:

Causes irritation to the eyes and skin. Acute inhalation exposure to manganese dioxide may produce manganese pneumonitis. (Toxicology, Casarett and Doull's) Overexposure to manganese dioxide may produce manganese poisoning which is unlikely to the normal workplace setting.

Routes of Entry:

Eyes: No Skin: No Inhalation: Yes Ingestion: Yes

CARCINOGENICITY: NTP: No IARC Monographs: No
 OSHA Regulated: No

Signs and Symptoms of Exposure: Irritation of the eyes, skin and respiratory conditions. Early symptoms of chronic manganese poisoning includes: langour, sleepiness and weakness in the legs. A stolid masklike appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. (3)

Medical Conditions Generally Aggravated by Exposure: Central nervous system, circulatory system, kidneys and respiratory system. (NIOSH)

12. Ecological Information

Mobility: No data available
 Degradability: No data available
 Accumulation: No data available
 Short and long term effects on:
 Ecotoxicity: No data available
 Other adverse effects: No data available

13. Disposal Considerations

Substance: Dispose of at an approved landfill in accordance with local, state, federal and national regulations.
 Contaminated packaging: Dispose of at an approved landfill in accordance with local, state, federal and national regulations.

14. Transportation information

INTERNATIONAL

| | | |
|-----------------|----------------------|---------------|
| Land transport: | ADR/RID/GGVS/GGVE: | Not Regulated |
| Sea transport: | IMDG/GGVSee UN-No.: | Not Regulated |
| Air transport: | ICAO/IATA UN/ID-No.: | Not Regulated |

| | | |
|---------------|-------------------------------|---------------|
| <u>U.S.</u> | D.O.T. Classification: | Not Regulated |
| <u>CANADA</u> | Transport of dangerous goods: | Not Regulated |

15. Regulatory Information

Labeling according to EEC Directives: Xn Harmful
 SARA
 SARA 312:

| | | | | |
|---------|--------------------|-------|-----------------------------|------|
| Health: | Immediate (Acute): | Yes* | Fire: | None |
| | Delayed (Chronic): | Yes** | Reactivity: | None |
| | | | Sudden release of pressure: | None |

* See Section 11

** See Section 11

SARA 313:

THIS PRODUCT CONTAINS A CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372. THIS INFORMATION MUST BE INCLUDED IN ALL MSDS THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL.

>92% Manganese Compound

Inventories

The ingredients of this product have been listed in the following inventories:

| | | |
|-------------------|---------|-----------|
| Australia AICS: | Listed | |
| Canada DSL: | Listed | |
| Europe EINECS: | Listed | 215-202-6 |
| Japan MITI: | Unknown | |
| U.S.A. TSCA: | Listed | |
| Philippine Draft: | Listed | |
| Korean: | Listed | 1-702 |

HMIS Code: 200

16. Other Information

References:

1. Occupational Health Guidelines for Chemical Hazards, Vol. I, OSHA, Sept., 1978.
2. Occupational Diseases "A Guide to Their Recognition", U.S. DHEW (NIOSH), June 1977.
3. Documentation of the Threshold Limit Values, 6th Edition, ACGIH, 1991.
4. Pocket Guide to Chemical Hazards, NIOSH/OSHA, June, 1990.
5. Acute Oral Toxicity Tests for Manganese dioxide, The Shepherd Color Company Data, 6/12/76
6. Technical Data Sheet, The Shepherd Color Company.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, The Shepherd Color Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purpose prior to use. In no event will The Shepherd Color Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CHEMICAL LOCATION | RAW MATERIAL STORAGE | | | 4 | | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J5 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|------------------------------------|--|---|---|--------------|---|----|
| CHEMICAL NAME | TYPE 2 ACTIVATED MANGANESE DIOXIDE | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | MANGANESE DIOXIDE | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 | * If EHS is "Yes", all amounts must be LBS | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGF) | 13 | | | | |

| | | | | | | | |
|--------------------------------------|---|----|-----------------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input checked="" type="checkbox"/> a. SOLID <input type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input checked="" type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH | 18 | | |

| | | | | | | | | | | |
|----------------------|---|---|----------------------|--------------|----------|---------------------|-------------------|-------------|------------------|----|
| AVERAGE DAILY AMOUNT | 1000 | 19 | MAXIMUM DAILY AMOUNT | 2600 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
| UNITS | <input type="checkbox"/> a. GALLONS <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> b. CUBIC FEET <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 220 LB DRUM | 25 | |

| | | | | | | |
|--|---|---|---|---|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT <input checked="" type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|---|---|---|--|----|

| | | |
|---------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|------------------------|---|---|-----------|
| 1 65-100 ²⁹ | MANGANESE DIOXIDE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1313-13-9 |
| 2 0-7 ²⁹ | ALUMINUM OXIDE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1344-28-1 |
| 3 0-2 ²⁹ | BARIUM OXIDE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1304-28-5 |
| 4 0-5 ²⁹ | IRON OXIDE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1309-37-1 |
| 5 0-2 ²⁹ | SODIUM HYDROXIDE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1310-73-2 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

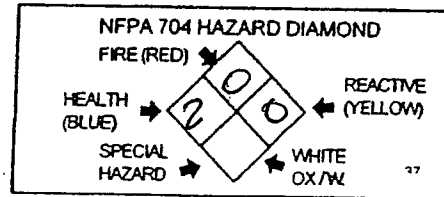
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS


EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



| | |
|---|--|
|  | <h2 style="margin: 0;">MATERIAL SAFETY DATA SHEET</h2> |
| <p><i>The Shepherd Color Company</i> We Brighten Lives</p> | |

1. Product Name: **Type 2 Activated Manganese Dioxide** Revision # 7

Date: 13-Jun-2008

Company: The Shepherd Color Company
4539 Dues Drive
Cincinnati, Ohio 45246
U.S.A.

Shepherd Color International
Serskampsteenweg 135A
B-9230 Wetteren, Belgium

Shepherd Color International
1st Floor, 479 Warrigal Rd
Moorabbin, Victoria 3189
Australia

Shepherd Color International
Shinjuku Dai-ichi Seimei Building 4-F
2-7-1, Nishi-Shinjuku
Shinjuku-ku
Tokyo, Japan 163-0704

Telephone: U.S.A. Office: 513-874-0714
Belgium Office: +32-9-366-1111
Australian Office: +61-3-9532-5260
Japanese Office: +813-3344-3010

Emergency information: Telephone: Domestic Shipments: CHEMTREC 800-424-9300
International Shipments: CHEMTREC (703) 527-3887

2. Hazards Identification

| | |
|----------------------|--|
| EEC Risk Phrases: | This document has been prepared in accordance with 91/155/EC. R 20/22, 36/38 Harmful by inhalation and if swallowed. Irritating to eyes and skin. S(2-) 25 |
| EEC Safety Phrases: | Use suitable extinguishing media for fire fighting. |
| Methods for Cleanup: | See Section XI for Toxicological Information. |

3. Composition/Information on Ingredients

| Ingredients: | CAS No: | EINECS | % Weight (Typical) |
|----------------|-----------|--------|--------------------|
| Aluminum Oxide | 1344-28-1 | | 0-7 |
| Barium Oxide | 1304-28-5 | | 0-2 |

| | | | |
|------------------------------|------------|-----------|--------|
| Iron (III) Oxide | 1309-37-1 | 215-168-2 | 0-5 |
| Manganese dioxide, activated | 1313-13-9 | 215-202-6 | 65-100 |
| Silica Quartz | 14808-60-7 | | 1-5 |
| Sodium Hydroxide Flake | 1310-73-2 | 215-185-5 | 0-2 |
| Water | 7732-18-5 | | 0-4 |

Synonyms: MN0002 - Type 2 Activated MnO2

4. First Aid Measures

| | |
|-----------------------|--|
| If inhaled: | If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. |
| On ingestion: | If conscious, drink large quantities of water. Do Not induce vomiting. Get immediate medical attention. NEVER give anything by mouth to an unconscious person. |
| On contact with eyes: | On contact with eyes flush eyes with plenty of water for at least fifteen (15) minutes. Call a physician. |
| On skin contact: | On skin contact, wash thoroughly with soap and water. |

5. Fire Fighting Measures

| | |
|---------------------------------|--|
| Suitable extinguishing media: | Foam, CO2, dry chemical fire extinguisher or water spray. |
| Unsuitable extinguishing media: | Not applicable |
| Emitted when burned: | Not applicable |
| Special protective equipment: | Use appropriate techniques for fighting surrounding fire. |
| Further information: | May spark, smolder and/or ignite when rubbed or heated with easily oxidized materials. |

6. Accidental Release Measures

| | |
|----------------------------|---|
| Personal precautions: | Maintain appropriate dust control. |
| Environmental precautions: | Prevent contamination of soils, drains and surface water. |
| Methods for cleanup: | Transfer material into closed container for re-use or disposal. |

7. Handling and Storage

| | |
|-----------|--|
| Handling: | Good housekeeping procedures should be followed to prevent dust during processing. Do not eat, drink or smoke in work areas. Wash thoroughly with soap and water after handling. Provide eye wash stations in areas of handling. |
| Storage: | Store material in a closed container. Normal warehousing. |

8. Exposure Controls and Personal Protection

| | |
|--------------------------------|--|
| Engineering controls/measures: | Use mechanical ventilation to keep dust below regulatory standards (see Section II). Design criteria usually cannot be specified in an MSDS because of its complexity. |
|--------------------------------|--|

Personal Protective Equipment:

Respiratory protection: MSHA/NIOSH respirators approved for dusts TC-21C or NIOSH approved cartridges for Non-oil aerosols, N95, N99, N100 (42 CFR 84).

Hand protection: Rubber, PVC coated gloves, impermeable.

Eye protection: Safety Glasses with side shields, mono goggles.

Body protection: No special precautions (see hand protection).

General safety and hygiene measures: Good housekeeping procedures should be followed to prevent dust during processing.

| As Regulated (Related Exposure Limits) | OSHA PEL (mg/m ³) | ACGIH TLV (mg/m ³) | %Metal (Typical) | Sara 313 |
|---|---|-----------------------------------|---------------------|-------------|
| Aluminum Oxide | 5 Respirable 15 mg/m ³ total | 10 | 0-7 | No |
| Barium insoluble compounds | Not established | Not established | 0-2 | Yes |
| Iron Oxide dust (as Fe) Total Particulate | None | 10 Total | 0-5 | No |
| Manganese compounds (as Mn) | 5 Ceiling | 0.2 | 50-100 | Yes |
| Silica -Quartz | 10 /%SiO ₂ +2 (Respirable) Or 30/%SiO ₂ +2 (Total dust) | 0.05 Respirable | 1-5 | No |
| Sodium hydroxide | 2 Ceiling | 2 Ceiling | 0-2 | No |

9. Physical and Chemical Properties

Appearance: Brownish-Black Powder

Odor: No Odor

Melting point/melting range: > 535 degrees C

Boiling point/boiling range: Not applicable

Flash point: Not applicable

Combustibility: Not applicable

Explosion limits:

Lower Vol. %: Not applicable

Upper Vol. %: Not applicable

Ignition temperature: Not applicable

Self-ignition: Not applicable

Self-ignition temperature: Not applicable

Explosion hazard: Not applicable

Fire promoting properties: Not applicable

Vapor pressure: Not applicable

Specific gravity: 3.5

Bulk density: No data available

Packing density: No data available

Solubility in Water: Negligible

Solubility in other solvents: Negligible

pH value: 9-11

Octanol/water partition coefficient (log POW): Not applicable
 Viscosity: Not applicable
 Other information: Not applicable

10. Stability and Reactivity

Conditions to avoid: Decomposition 535 degrees C. Oxygen will be released during the decomposition.
 Materials to avoid: Easily oxidized materials
 Hazardous reactions: None known
 Hazardous decomposition products: None known

11. Toxicological Information

Acute Toxicity

LD50/oral/rat: 14,900 mg/kg (5)
 LD50/inhal/rat: Not Tested
 Sensitizing: None expected
 Primary skin irritation/rabbit: No data available
 Primary mucous membrane irritation/rabbit' eyes: No data available

ADDITIONAL INFORMATION:

Causes irritation to the eyes and skin. Acute inhalation exposure to manganese dioxide may produce manganese pneumonitis. (Toxicology, Casarett and Doull's) Overexposure to manganese dioxide may produce manganese poisoning which is unlikely to the normal workplace setting.

Routes of Entry:

Eyes: No Skin: No Inhalation: Yes Ingestion: Yes

CARCINOGENICITY: NTP: Yes IARC Monographs: Yes
 OSHA Regulated: No

Crystalline silica has been reviewed by IARC. IARC found limited evidence for carcinogenicity of crystalline silica in humans and sufficient evidence in experimental animals. Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC Monograph, Volume 68). Silica, crystalline is known to be a human carcinogen (NTP 10th Edition) Warning: This product contains a chemical known to the State of California to cause cancer.

Signs and Symptoms of Exposure: Irritation of the eyes, skin and respiratory conditions. Early symptoms of chronic manganese poisoning includes: languor, sleepiness and weakness in the legs. A stolid masklike appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. (3)

Medical Conditions Generally Aggravated by Exposure: Central nervous system, circulatory system, kidneys and respiratory system. (NIOSH)

12. Ecological Information

Mobility: No data available
 Degradability: No data available
 Accumulation: No data available
 Short and long term effects on:
 Ecotoxicity: No data available
 Other adverse effects: No data available

13. Disposal Considerations

Substance: Dispose of at an approved landfill in accordance with local, state, federal and national regulations.
 Contaminated packaging: Dispose of at an approved landfill in accordance with local, state, federal and national regulations.

14. Transportation information

INTERNATIONAL

| | | |
|-----------------|----------------------|---------------|
| Land transport: | ADR/RID/GGVS/GGVE: | Not Regulated |
| Sea transport: | IMDG/GGVSee UN-No.: | Not Regulated |
| Air transport: | ICAO/IATA UN/ID-No.: | Not Regulated |

| | | |
|----------------------|-------------------------------|---------------|
| <u>U.S.</u> | D.O.T. Classification: | Not Regulated |
| <u>CANADA</u> | Transport of dangerous goods: | Not Regulated |

15. Regulatory Information

Labeling according to EEC Directives: Xn harmful

SARA
 SARA 312:

| | | | | |
|---------|--------------------|-------|-----------------------------|------|
| Health: | Immediate (Acute): | Yes* | Fire: | None |
| | Delayed (Chronic): | Yes** | Reactivity: | None |
| | | | Sudden release of pressure: | None |

* See Section 11
 ** See Section 11

SARA 313:

THIS PRODUCT CONTAINS A CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372. THIS INFORMATION MUST BE INCLUDED IN ALL MSDS THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL.

75-100% Manganese Compound

Inventories

The ingredients of this product have been listed in the following inventories:

| | | |
|-------------------|---------|-----------|
| Australia AICS: | Listed | |
| Canada DSL: | Listed | |
| Europe EINECS: | Listed | 215-202-6 |
| Japan MITI: | Unknown | |
| Korean: | Listed | 1-702 |
| Philippine Draft: | Listed | |
| U.S.A. TSCA: | Listed | |

HMIS Code: 200

16. Other Information

References:

1. Occupational Health Guidelines for Chemical Hazards, Vol. I., OSHA, Sept., 1978.
2. Occupational Diseases "A Guide to Their Recognition", U.S. DHEW (NIOSH), June 1977.
3. Documentation of the Threshold Limit Values, 6th Edition, ACGIH, 1991.
4. Pocket Guide to Chemical Hazards, NIOSH/OSHA, June, 1997.
5. Acute Oral Toxicity Tests for Manganese dioxide, The Shepherd Color Company Data, 6/12/76
6. Technical Data Sheet, The Shepherd Color Company.

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HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | | |
|--------------|-------|----|---------------|---------------------------------------|---|
| FACILITY ID# | 30035 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. | 3 |
|--------------|-------|----|---------------|---------------------------------------|---|

I. FACILITY INFORMATION

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CHEMICAL LOCATION | RAW MATERIAL STORAGE | | | 4 | | | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J5 | 7 |

II. CHEMICAL INFORMATION

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|---|--|---|---|--|---------------------------------|--|------------------------------------|------------------------------------|--------------------------------------|---|---|--|--|--------------------------------------|--------------------------------------|-----------------------------------|----|
| CHEMICAL NAME | MANGANESE (IV) OXIDE | | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 | | | | | | | | | | | | | |
| COMMON NAME | MANGANESE DIOXIDE | | * If EPCRA see instructions | | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 | | | | | | | | | | | | | |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFD) | 13 | | | | | | | | | | | | | | | | | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE | <input checked="" type="checkbox"/> b. MIXTURE | <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 | | | | | | | | | | | | |
| PHYSICAL STATE (Check one item only) | <input checked="" type="checkbox"/> a. SOLID | <input type="checkbox"/> b. LIQUID | <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE | <input type="checkbox"/> b. REACTIVE | <input type="checkbox"/> c. PRESSURE RELEASE | 18 | | | | | | | | | | | | |
| | | | | | | <input type="checkbox"/> d. ACUTE HEALTH | <input type="checkbox"/> e. CHRONIC HEALTH | | | | | | | | | | | | | | |
| AVERAGE DAILY AMOUNT | 500 | 19 | MAXIMUM DAILY AMOUNT | 3000 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 | | | | | | | | | | | |
| UNITS | <input type="checkbox"/> a. GALLONS | <input type="checkbox"/> b. CUBIC FEET | 23 | <input checked="" type="checkbox"/> c. POUNDS | <input type="checkbox"/> d. TONS | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 176 LB DRUM | 25 | | | | | | | | | | |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK | <input type="checkbox"/> b. UNDERGROUND TANK | <input type="checkbox"/> c. TANK INSIDE BLDG | <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM | <input type="checkbox"/> f. NONMETALLIC DRUM | <input type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY | <input type="checkbox"/> i. VAT | <input type="checkbox"/> j. FIBER DRUM | <input type="checkbox"/> k. BAG(S) | <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER | <input type="checkbox"/> n. GLASS CONTAINER | <input type="checkbox"/> o. PLASTIC CONTAINER | <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON | <input type="checkbox"/> r. RAIL CAR | <input type="checkbox"/> s. TOTE BIN | <input type="checkbox"/> t. OTHER | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | | | | | | | | | | | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT | <input type="checkbox"/> b. ABOVE AMBIENT | <input type="checkbox"/> c. BELOW AMBIENT | <input type="checkbox"/> d. CRYOGENIC | 28 | | | | | | | | | | | | | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-------------------------|---|--|-----------|
| 1 65-85 ²⁹ | MANGANESE OXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1313-13-9 |
| 2 1-2 ²⁹ | SODIUM HYDROXIDE | <input type="checkbox"/> Yes <input type="checkbox"/> No | 1310-73-2 |
| 3 2-5 ²⁹ | WATER | <input type="checkbox"/> Yes <input type="checkbox"/> No | 7732-18-5 |
| 4 balance ²⁹ | UNK. | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

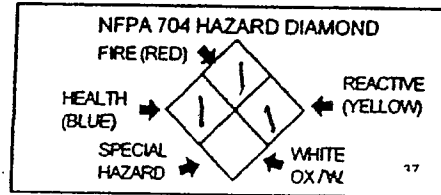
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

Material Safety Data Sheet

Manganese (IV) Oxide

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Manganese (IV) Oxide

OTHER/GENERIC NAMES: Manganese (IV) Oxide, PS-C, PS-H, FA-F

PRODUCT CODE: 13207, 13340, 13341, 13278

PRODUCT USE: Inorganic Chemical

MANUFACTURER: Riedel-de Haën, a subsidiary of Honeywell International Inc.
Specialty Chemicals
101 Columbia Road
Box 1139
Morristown, New Jersey 07962-1139

FOR MORE INFORMATION CALL:
(Monday-Friday, 9:00am-4:30pm)
800-322-2766

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
Medical: 1-800-498-5701
Transportation: 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>INGREDIENT NAME</u> | <u>CAS NUMBER</u> | <u>WEIGHT %</u> |
|--------------------------------|-------------------|-----------------|
| Manganese oxide | 1313-13-9 | 65-85 |
| Sodium hydroxide (extractable) | 1310-73-2 | <=1 - <=2 |
| Sodium hydroxide (total) | | |
| Water | 7732-18-5 | 2-5 |
| Unknown impurities | None | Balance |

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: A black or brown odorless solid or powder which is harmful if inhaled or swallowed.

POTENTIAL HEALTH HAZARDS

SKIN: May cause skin irritation.

EYES: May cause eye irritation.

MATERIAL SAFETY DATA SHEET

Manganese (IV) Oxide

INHALATION: Can cause "metal fume fever", a flu-like illness lasting up to 24 hours, with chills, aching and fever. Chest congestion can also occur, with coughing, shortness of breath and other pneumonia-like effects.

INGESTION: Harmful if swallowed.

DELAYED EFFECTS: Can cause central nervous system damage, changes in the blood, and liver, kidney and lung damage.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

| <u>INGREDIENT NAME</u> | <u>NTP STATUS</u> | <u>IARC STATUS</u> | <u>OSHA LIST</u> |
|------------------------|-------------------|--------------------|------------------|
|------------------------|-------------------|--------------------|------------------|

No ingredients listed in this section.

4. FIRST AID MEASURES

SKIN: Immediately remove contaminated clothing. Flush affected area with large amounts of water for at least 15 minutes. Use soap if available. Get medical attention.

EYES: Immediately flush eyes with large quantities of water for at least 15 minutes. Get medical attention.

INHALATION: Remove victim to fresh air. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen provided a qualified operator is available. Get immediate medical attention.

INGESTION: If person is conscious, rinse mouth with water. Do not induce vomiting unless directed to do so by a physician. Get immediate medical attention.

ADVICE TO PHYSICIAN: No specific advice. Treat according to symptoms present.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not applicable.

FLASH POINT METHOD: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

UPPER FLAME LIMIT (volume % in air): Not applicable.

LOWER FLAME LIMIT (volume % in air): Not applicable.

FLAME PROPAGATION RATE (solids): Not applicable.

OSHA FLAMMABILITY CLASS: Not flammable.

EXTINGUISHING MEDIA:

Water spray, foam, carbon dioxide, or dry chemical.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Emits toxic fumes under fire conditions.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Use self-contained breathing apparatus and full protective clothing.

MATERIAL SAFETY DATA SHEET

Manganese (IV) Oxide

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)
Use a vacuum or a wet method to reduce dust during clean-up. Do not dry sweep. Collect and place in an approved, labeled waste container. Do not allow to enter into sewers or waterways.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)
Use with adequate ventilation. Do not inhale dust. Avoid contact with skin, eyes and clothing. Wash hands before breaks and after work. Do not eat, drink or smoke in the work area.

STORAGE RECOMMENDATIONS:

Store in a cool, dry area. Keep containers upright and tightly closed. Store away from heat, flammable materials, and oxidizers since violent reactions can occur. Protect containers from physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

General mechanical ventilation is recommended. Use local ventilation at product handling or transfer points.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Rubber gloves and clothing suitable to prevent skin contact.

EYE PROTECTION:

Safety glasses or goggles.

RESPIRATORY PROTECTION:

Not required for properly ventilated areas. If there is potential for the inhalation of dust, use an appropriate NIOSH approved respirator.

The respirator must be selected based on contamination levels and use conditions found in the workplace, must not exceed the working limits of the respirator and be approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.134.

ADDITIONAL RECOMMENDATIONS:

Safety showers and eyewash in close proximity to working area.

MATERIAL SAFETY DATA SHEET

Manganese (IV) Oxide

EXPOSURE GUIDELINES

| <u>INGREDIENT NAME</u> | <u>ACGIH TLV</u> | <u>OSHA PEL</u> | <u>OTHER LIMIT</u> |
|------------------------|--|--|--------------------|
| Manganese oxide | 5 mg/m ³ TWA (as Mn dust) 1 mg/m ³ TWA (as Mn fume) 3 mg/m ³ STEL (as Mn fume) | 3 mg/m ³ STEL (as Mn fume) | None |
| Sodium hydroxide | 2 mg/m ³ Ceiling | 2 mg/m ³ Ceiling | None |

- * = Limit established by Honeywell International Inc.
 ** = Workplace Environmental Exposure Level (AIHA).
 *** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---------------------------------|--|
| APPEARANCE: | Black or brown solid or powder. |
| PHYSICAL STATE: | Solid or powder. |
| MOLECULAR WEIGHT: | 86.94 |
| CHEMICAL FORMULA: | MnO ₂ |
| ODOR: | Odorless. |
| SPECIFIC GRAVITY (water = 1.0): | 3.9-5.0 gms/cm ³ @ 68°F (20°C). |
| SOLUBILITY IN WATER (weight %): | Insoluble. |
| pH: | 10 - 11 |
| BOILING POINT: | Not applicable. |
| MELTING POINT: | > 995°F (535°C) (decomposes) |
| VAPOR PRESSURE: | Not applicable. |
| VAPOR DENSITY (air = 1.0): | Not applicable. |
| EVAPORATION RATE: | Not applicable. COMPARED TO: Not applicable. |
| % VOLATILES: | Not applicable. |
| FLASH POINT: | Not applicable. |

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Stable under normal conditions.

INCOMPATIBILITIES:

Avoid contact with combustible materials and reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:

Decomposition may generate oxides of manganese.

HAZARDOUS POLYMERIZATION:

Will not occur.

MATERIAL SAFETY DATA SHEET

Manganese (IV) Oxide

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

LD₅₀ (subcutaneous-mouse): 422 mg/kg
Reproductive effects have been reported in mice.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Manganese compounds can cause chronic poisoning. Can effect the central nervous system, lungs, blood and kidneys.

OTHER DATA:

None.

12. ECOLOGICAL INFORMATION

Data not available.

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? Not listed.
If yes, the RCRA ID number is: Not applicable.

OTHER DISPOSAL CONSIDERATIONS: Dispose of in accordance with local, state and Federal regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD PROPER SHIPPING NAME: Not regulated
US DOT HAZARD CLASS: Not applicable

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Material is on the TSCA Inventory.

OTHER TSCA ISSUES: None.

MATERIAL SAFETY DATA SHEET

Manganese (IV) Oxide

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

| <u>INGREDIENT NAME</u> | <u>SARA/CERCLA RQ (lb)</u> | <u>SARA EHS TPQ (lb)</u> |
|------------------------|----------------------------|--------------------------|
| Sodium Hydroxide | 1000 | None. |

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Delayed.

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

| <u>INGREDIENT NAME</u> | <u>COMMENT</u> |
|------------------------|---------------------|
| Manganese oxide | Manganese compounds |

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

| <u>INGREDIENT NAME</u> | <u>WEIGHT %</u> | <u>COMMENT</u> |
|--|-----------------|----------------|
| No ingredients listed in this section. | | |

ADDITIONAL REGULATORY INFORMATION:

None

WHMIS CLASSIFICATION (CANADA):

Not determined.

FOREIGN INVENTORY STATUS:

Manganese Dioxide is on the following inventories:

- EINECS
- Canadian DSL.
- Australian.
- Korean.
- Japanese (ENCS).
- Philippine (PICCS).

16. OTHER INFORMATION

CURRENT ISSUE DATE: August, 2006

PREVIOUS ISSUE DATE: February 21, 2000

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

Section 1: Updated contact information

MATERIAL SAFETY DATA SHEET

Manganese (IV) Oxide

Section 2: Modify composition information

OTHER INFORMATION: None.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | |
|--------------|-----------|------------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|------------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|---------|----------|
| CHEMICAL LOCATION | RAW MATERIAL | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP # | 6 GRID # |

II. CHEMICAL INFORMATION

| | | | | | | |
|---|---|---|---|---|--|----|
| CHEMICAL NAME | IPS 1400 SERIES | | WASTE <input type="checkbox"/> Yes <input type="checkbox"/> No | 8 | TRADE SECRET <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
| COMMON NAME | TWO-COMPONENT WATER-BLOWN FOAM | | 9 | | An EHS Chemical <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFDF) | | 13 | | |
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE | 18 | |
| AVERAGE DAILY AMOUNT | | 19 | MAXIMUM DAILY AMOUNT | 20 | ANNUAL WASTE AMOUNT | 21 |
| UNITS <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | | 23 | DAYS ON SITE | 24 | LARGEST CONTAINER | 25 |
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM | <input type="checkbox"/> e. PLASTIC DRUM <input checked="" type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER | <input type="checkbox"/> h. CARBOY <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) | <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP | <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 | | | | |
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 | | | | |

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------------------|---|--|-------------------------|
| 30-50 ²⁹ | 4,4-DIPHENYLMETHANE DIISOCYANATE ³⁰ | <input type="checkbox"/> Yes <input type="checkbox"/> No ³¹ | 101-68-8 ³² |
| 30-50 ²⁹ | HIGHER OLIGOMERS OF MDI ³⁰ | <input type="checkbox"/> Yes <input type="checkbox"/> No ³¹ | 9016-87-9 ³² |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No ³¹ | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No ³¹ | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No ³¹ | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

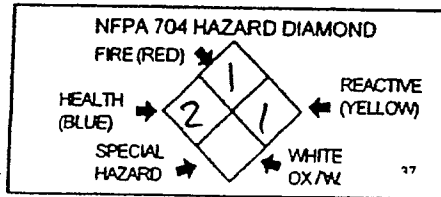
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



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050172



INNOVATIVE POLYMER SYSTEMS, INC.

8530 Milliken Avenue
Rancho Cucamonga, CA 91730
TEL 909-941-4999 FAX 909-941-4944
www.ipopolymer.com

Material Safety Data Sheet

Code: R "A"
Issue date: 3-1-96
Updated: Oct. 1, 06

I. Product Identification - "A" Component - Polymeric Isocyanate

Product Name: Two-Component Water-Blown Foam
Product Code: IPS 1400 Series, 1500 Series, 1600 Series, 2000 Series, 3000 Series, 8000 Series,
2000 Series, 2010, 2034, 2301, 2305, 2500, 2501, 2530, 2534, 2540, 2550, 2562, 2576, 2700,
3000 Series 3001, 3002, 3062, 3245, 3501, 3770
(including all designations such as -2.5, -60DS, -90D, etc. following product code)

Chemical Family: Polymeric Isocyanate
Chemical Name: Polymeric Diphenylmethane 4,4 Diisocyanate
Synonyms: MDI, ISO, "A" Component
CAS Number: See Below
TSCA Status: On Inventory

II. Hazardous Ingredients*

| Components: | Approx. % | Current TLV/PEL |
|---|-----------|------------------|
| 4,4- Diphenylmethane Diisocyanate Cas# 101-68-8 | 30 - 50 | .02 PPM, ceiling |
| Higher Oligomers of MDI Cas# 9016-87-9 | 30 - 50 | Not Listed |

* Ingredients not precisely identified are proprietary or not hazardous. Values are not product specifications.

III. Physical Data

Appearance: Viscous Liquid
Color: Light To Dark Brown
Odor: Slightly Aromatic Or Musty
Molecular WT: N/A
Melt Point / Freeze Point: Below 60°F.
Boiling Point: Decomposes At 646°F (341°C)
Vapor Pressure: (mm Hg at 20°C : below 0.0001)
Vapor Density (Air = 1): 8.6
Specific Gravity: 1.2
Solubility In Water: Reacts
Voc %: 0

IV. Fire & Explosion Data

Flash Point: 425°F. (218°C.) COC
Flammable Limits In Air By Volume -
Lower: N.E (Nonvolatile Fluid)
Upper: N.E (Nonvolatile Fluid)
Extinguishing Media: Dry chemical extinguishers such as Monoammonium Phosphate, Potassium Sulphate, Potassium Chloride.
Additionally, Carbon Dioxide, high expansion (Protenic) chemical foam, water spray for large fires.
Special Fire Fighting Procedure: If water is used, use large amounts as the reaction between hot Isocyanates and water can be vigorous. Use self- contained breathing apparatus and body covering protective clothing.
Unusual Fire and Explosion Hazards: Water contamination will produce Carbon Dioxide. Do not re-seal contaminated containers as pressure buildup may rupture them.

V. Health Hazard Information**Animal Toxicity**

- Oral, LD50 (ingestion): >20 G/KG (Rats)
 Dermal, LDS50 (skin contact): >15.8 G/KG (Rabbits)
 Inhalation, LC50 (4 HR): Approx. 370 MG/L (Dapnea, Limnea Invertebrates and Zebra Fish)
- Eyes: Liquids, aerosols, or vapors are irritating and can cause tearing, reddening, and swelling following contact.
 Skin: Can cause skin irritation, which may include the following: reddening, swelling, rash, scaling, and blistering. Sensitization to isocyanates may result with prolonged contact.
 Other: No conclusive evidence has been developed to indicate that MDI is carcinogenic, teratogenic, or that it causes reproductive effects in animals and humans.

Human Effects of Overexposure

- Inhalation: May cause respiratory sensitization in susceptible individuals. At room temperature, vapors are minimal due to low vapor pressure. If heated or sprayed as an aerosol, excessive concentrations are attainable that could be hazardous on single exposure. Excessive exposure may cause irritation of the eyes, upper respiratory tract and lungs. Effects may be delayed. Decreased ventilatory capacity has been associated with exposure to similar Isocyanates; it is possible that exposure to MDI may cause impairment of lung function.
- Skin: May cause allergic skin reaction in susceptible individuals. Prolonged or repeated contact may cause skin irritation and may stain the skin.
- Ingestion: This is not considered a common occupation route of exposure, and single dose toxicity is low.
 Threshold Limit Value (ACGIH): TLV is .005 PPM TWA
 Permissible Exposure Limit (OSHA): PEL is .02 PPM

VI. Emergency & First Aid Procedures

- Eye contact: Flush with clean, lukewarm water at low pressure for at least 15 minutes, occasionally lifting eyelids. Consult a physician immediately.
- Skin Contact: Remove contaminated clothing. Wash exposed area with warm soapy water thoroughly. Contaminated clothing should be properly laundered before reusing.
- Inhalation: Remove victim from area of exposure to safe area. If not breathing, give mouth to mouth resuscitation. If breathing is difficult, give oxygen. Consult a physician immediately.
- Ingestion: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.
- Note to Physician:** No specific antidote. Supportive care. Treatment based on judgement of physician in response to reaction of the patient. The manifestation of respiratory symptoms, including pulmonary edema, resulting from acute exposure, may be delayed. May cause respiratory sensitization.
- Carcinogenicity:** Neither MDI nor Polymeric MDI are listed by the NTP, IARC, or regulated by by Federal OSHA or Cal OSHA as carcinogens.
- Medical conditions aggravated by exposure:** Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), skin allergies, eczema.

VII. Employee Protection Recommendations

- Eye Protection: Liquid chemical goggles or full face shield. No contact lenses should be worn.
- Skin Protection: Chemical resistant gloves such as natural rubber, or polyvinyl alcohol. Cover as much as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.
- Respiratory Protection: This product has demonstrated no observable effects at room temperature, however, atmospheric levels should be maintained. In addition, in any spray application or situation where airborne particulates or aerosol are generated, a supplied air source must be provided.
- Ventilation: Natural or mechanical. Local exhaust will keep the TLV below minimum in most cases. Spills or other emergencies may require more forceful ventilation means.
- Other: Safety showers and eye wash stations should be provided in all work areas. All employees should be properly trained.

VIII. Reactivity Data

- Stability: Stable under recommended storage conditions.
- Polymerization: May occur with incompatible reactants, especially strong bases, water or temperature over 347°F (175°C). Temperatures over 120°F (49°C) accelerate the reaction with water.
- Incompatibility (materials to avoid): Water, acid, bases, metal compounds and surface active materials. Avoid water as it reacts to form heat, CO₂ and insoluble urea. The combined effect of the CO₂ and heat can produce enough presence of the above mentioned materials.
- Hazardous Decomposition Products: Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides and traces of hydrogen cyanide.

IX. Spill Or Leak Procedure

Steps to be taken in case material is spilled or released:

- Minor Spills: Contain the spilled material and then cover with a loose, absorbent material such as oildry, vermiculite, sawdust, or fuller's earth. Shovel waste material into proper waste containers. Do not make pressure tight. Transport to a well-ventilated area and treat with a neutralizing solution consisting of a mixture of water and concentrated ammonium Hydroxide or 5-10% sodium carbonate. Add about 10 parts of neutralizer per part of Isocyanate with mixing. Allow to stand 48 hours letting evolved CO₂ escape.
- Major Spills: Call Innovative Polymer Systems Inc. immediately at (909) 941-4999. If it is a transportation spill, transportation spill notify Chem.Tel at (800) 255-3924. Evacuate and ventilate spill area. Dike spills to prevent entry into the environment. Wear full protective equipment including respiratory protection during clean up.
- If temporary control of Isocyanate vapor is required, a blanket of protein foam may be placed over the spill. Large quantities may be pumped into closed but not sealed containers for disposal.
- Clean Up: Decontaminate area using water/ammonia solution with 1-2% added detergent, letting it stand over affected area for at least 10 minutes. Cover mops, brooms, etc used for this with plastic and dispose of properly (often by incineration).
- Waste Disposal Methods: Waste material may be incinerated at proper facilities or disposed of under Local, State, and Federal regulations controlling environmental protection.

X. Special Precautions & Storage Data

- Storage Temperature (Min/ Max): 65°F. (18°C.) to 75°F. (24°C.)
- Average Shelf Life: 6 months from date of mfg.
- Special Sensitivity (heat, light, moisture): This product is reactive with water. Containers should be tightly sealed to prevent moisture contamination. A nitrogen blanket should be used for bulk storage at a temperature of 65°F to 75°F. Protect from freezing.
- Precautions in Handling and Storage: If contamination of the MDI is suspected, do not re-seal container because of possible rupture due to pressure buildup. Always slowly vent container when opening to relieve any pressure buildup.

XI. Shipping Data

- | | | |
|---------------------------------|---|---------------|
| Technical Shipping Name: | 4,4 - Diphenylmethane Diisocyanate | |
| Freight Class Bulk: | 4,4 - Diphenylmethane Diisocyanate | |
| Freight Class Package: | Chemicals, NOI (Isocyanate), NMFC 60000 | |
| Product Label: | Product Label Established | |
| DOT (HM-181) (Domestic Surface) | Hazard Class or Division: | Non-regulated |
| IMO/IMDG Code (OCEAN) | Hazard Class or Division: | Non-regulated |

For further information, contact Innovative Polymer Systems, Inc. at (909) 941-4999

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Innovative Polymer Systems, Inc. The data on these sheets relates only to the specific material designated herein. Innovative Polymer Systems, Inc. assumes no legal responsibility for use or reliance upon this data.

innovative polymer systems inc. • 8530 Milliken Ave. Rancho Cucamonga California 91730 • tel (909)941-4999 • fax (909)941-4944



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 3 0 0 3 5 38 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.** 3

I. FACILITY INFORMATION

CHEMICAL LOCATION **CLASS 1 ROOM** 4

CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # 1 6 GRID # **I 2** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **METHYLON 75108** WASTE Yes 8 TRADE SECRET Yes No 11
* If EPCRA see instructions

COMMON NAME **LIQUID PHENOLIC RESIN** 9 An EHS Chemical Yes No 12
* If EHS is "Yes", all amounts must be LBS

CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFDF) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **300** 19 MAXIMUM DAILY AMOUNT **600** 20 ANNUAL WASTE AMOUNT **NONE** 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **50 GAL DRUM** 25
 c. POUNDS d. TONS
* If EHS, amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER _____

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------------|---|---|---------------|
| 1 71-75 29 | FORMALDEHYDE, POLYMER WITH 3-CHLORO 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 28470-78-2 32 |
| 2 14-15 29 | BENZENE TRIMETHANOL, ar-(2-PROPEN)- 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 64051-40-7 32 |
| 3 9-10 29 | BENZENE TRIMETHANOL, ar-(2-PROPENYL)- 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 28655-63-2 32 |
| 4 1.4-2.1 29 | BENZENE METHANOL, (2-PROPENYLOXY) 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 28655-62-1 32 |
| 5 0.1-0.15 29 | FORMALDEHYDE 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 50-00-0 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

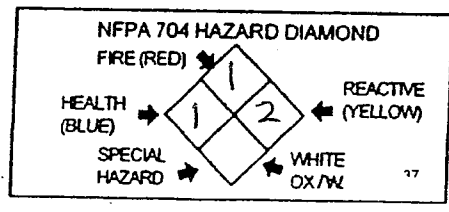
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

MATERIAL SAFETY DATA SHEET

Durez Corporation

Durez Canada Company, LTD.

SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT DESCRIPTION: LIQUID PHENOLIC RESIN
PRODUCT CODE: METHYLON 75108

MANUFACTURER

Durez Corporation
46820 Magellan Drive
Suite C
Novi MI 48377
Service Number: 1-800-699-0169
**Alternate Customer
Service:** www.durez.com

24 HR. EMERGENCY TELEPHONE NUMBERS

1-888-211-4441

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Product is an amber liquid.

IMMEDIATE CONCERNS: Liquid, vapors or mist may be irritating to eyes, skin and respiratory tract. Contains phenol which causes skin darkening, kidney, liver, CNS, and heart effects. Contains a skin and lung sensitizer. **POTENTIAL CANCER HAZARD.** May release formaldehyde. Risk of cancer depends on duration and level of exposure.

POTENTIAL HEALTH EFFECTS

EYES: Liquid or vapors may be irritating to the eyes.

SKIN: Liquid or vapors are irritating and may be harmful if absorbed through the skin. Prolonged and/or repeated contact with the skin may cause irritation or dermatitis.

INGESTION: Ingestion of a significant amount of hazardous ingredients from this product is unlikely. Weakly toxic by ingestion. Ingesting significant amounts may cause severe irritation of the mouth and throat, marked abdominal pain, vomiting and diarrhea.

INHALATION: The vapors of this product may be irritating to the respiratory tract.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

CHRONIC EFFECTS: Prolonged or repeated contact may cause dermatitis, skin darkening, kidney, liver, neurological and heart effects. Prolonged or repeated exposure to formaldehyde may cause skin and pulmonary sensitization, carcinogenicity and mutagenic effects.

3. COMPOSITION / INFORMATION ON INGREDIENTS

MATERIAL SAFETY DATA SHEET

Durez Corporation

Durez Canada Company, LTD.

SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

| Chemical Name | Wt.% | CAS | EINECS |
|--|------------|-------------|-----------|
| Formaldehyde, polymer with 3-chloro-1-propene and phenol | 71 - 75 | 028470-78-2 | |
| Benzenetrimethanol, ar-(2-propenyloxy)- | 14 - 15 | 064051-40-7 | |
| Benzenedimethanol, ar-(2-propenyloxy) | 9 - 10 | 028655-63-2 | |
| Benzenemethanol, (2-propenyloxy) | 1.4 - 2.1 | 028655-62-1 | |
| Formaldehyde | 0.1 - 0.95 | 000050-00-0 | 200-001-8 |

COMMENTS: General Product Information

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Neither the Occupational Safety and Health Administration (OSHA) nor the American Conference of Governmental Industrial Hygienists (ACGIH) has developed exposure limits for this product. Exposure limits exist for the following individual ingredients.

Formaldehyde is a specifically regulated chemical. Consult OSHA 29 CFR 1910.1048 for specific regulations and the relevant sections of this MSDS for additional information.

4. FIRST AID MEASURES

EYES: IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, while forcibly holding eyelids open to ensure complete irrigation of all eye and lid tissue. Washing eyes within several seconds of exposure is essential to achieve maximum effectiveness. IF IRRITATION OCCURS, SEEK MEDICAL ATTENTION IMMEDIATELY.

SKIN: For skin contact, wash immediately with soap and water. Wash contaminated clothing before reuse. IF IRRITATION OCCURS, SEEK MEDICAL ATTENTION IMMEDIATELY.

INGESTION: No specific intervention is indicated as compound is not likely to be hazardous by ingestion. However, if swallowed, DO NOT INDUCE VOMITING. Give the patient quantities of water or milk to minimize potential irritation. NEVER give anything by mouth to an unconscious person. SEEK MEDICAL ATTENTION IMMEDIATELY.

INHALATION: If inhaled, IMMEDIATELY remove the affected person to fresh air. If breathing is difficult, have qualified person administer oxygen. If the affected person is not breathing, apply artificial respiration. SEEK MEDICAL ATTENTION IMMEDIATELY.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: >212°F Method: TCC

FLAMMABLE LIMITS: Not Determined to Not Determined

AUTOIGNITION TEMPERATURE: Not Determined

FLAMMABLE CLASS: Class IIIB

GENERAL HAZARD: Electrostatic charge may build up during handling. Grounding of equipment is recommended.

MATERIAL SAFETY DATA SHEET

Durez Corporation
Durez Canada Company, LTD.
SumiDurez Canada GP

Date Issued: 04/17/2006
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EXTINGUISHING MEDIA: Use water spray, dry chemical, carbon dioxide, Halon, or alcohol foam.

HAZARDOUS COMBUSTION PRODUCTS: Complete combustion yields carbon dioxide and water. Incomplete combustion yields carbon monoxide, olefinic acid and paraffinic compounds. Varying amounts of ketones, aldehydes, alcohols and aromatics may also be formed.

FIRE FIGHTING PROCEDURES: Keep unauthorized personnel upwind.

FIRE FIGHTING EQUIPMENT: Firefighters should wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Soak up with absorbent material and place in properly labeled containers for disposal.

LARGE SPILL: Dike and pump into properly labeled containers for reclamation or disposal.

GENERAL PROCEDURES: Keep unnecessary personnel away. Eliminate all sources of ignition. Wear personal protective equipment as described in Exposure Controls/personal Protection (Section 8) of the MSDS. Contain spill with dike to prevent entry into sewers or waterways. The unreacted resin contains phenol, which is subject to effluent limitations under the Clean Water Act.

7. HANDLING AND STORAGE

HANDLING: Guard against dust accumulation of this material. As with all chemicals, good industrial hygiene practices should be followed when handling this material. When the container(s) is empty it may retain product residue including vapors which could accumulate. Therefore, do not cut, drill, grind, or weld empty containers. Additionally, do not conduct such activity(ies) near full, or empty containers without appropriate workplace safety authorization(s) or permit(s).

STORAGE: Store in a cool (refrigerated) area to prevent pressure buildup in containers and resin advancement. Keep container tightly closed and properly labeled. Do not reuse the empty container. Toxic product residues may remain in container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

| OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200) | | | | | | | |
|---|------|-----------------|-------------------|------------------|-------------------|-------------|-------------------|
| | | EXPOSURE LIMITS | | | | | |
| | | OSHA PEL | | ACGIH TLV | | SupplierOEL | |
| Chemical Name | | ppm | mg/m ³ | ppm | mg/m ³ | ppm | mg/m ³ |
| Formaldehyde | TWA | 0.75 ppm | NL | NL ppm | NL | NL | NL |
| | STEL | 2 ppm | NL | C 0.3 ppm [1] | C 0.37 [1] | NL | NL |
| OSHA TABLE COMMENTS: | | | | | | | |
| 1. C = Ceiling | | | | | | | |

MATERIAL SAFETY DATA SHEET

Durez Corporation

Durez Canada Company, LTD.

SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

ENGINEERING CONTROLS: Ventilation should be sufficient to effectively remove and prevent buildup of any vapors, dusts, or fumes that may be generated during handling or thermal processing. In order to ensure appropriate electrical safety practices are followed, consult applicable standards. These may include guidelines such as the National Fire Protection Association [NFPA] 70, "The National Electrical Code" and NFPA 499, "Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas". NOTE: since this material's vapors, dust or fumes can form explosive mixtures in air, ensure that any potential areas where explosions may occur are designed to minimize potential damage. For recommendations to prevent such explosions and associated damage, consult applicable guidelines such as National Fire Protection Association (NFPA) 69, "Standard on Explosion Prevention Systems" and/or NFPA 68, "Guide for Venting Deflagrations".

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear chemical safety goggles plus full-face shield to protect against splashing when appropriate (ANSI Z87.1).

SKIN: Wear impervious gloves such as neoprene, butyl, or nitrile.

RESPIRATORY: Wear a NIOSH approved chemical cartridge respirator following manufacturer's recommendations where airborne contaminants may reach levels above the listed component exposure limits. If exposure to formaldehyde above applicable exposure limits is likely, NIOSH approved respiratory protection is required. If the OSHA Action Level or STEL for formaldehyde is exceeded, use Table 1 of 29 CFR 1910.1048 (g) to determine the appropriate respiratory protection. A respiratory protection program that meets 29 CFR 1019.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.

OTHER USE PRECAUTIONS: Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1) Clothing contaminated with formaldehyde must be cleaned and laundered before reuse. Containers and storage areas for formaldehyde contaminated clothing and equipment must have labels and signs. The laundry must be informed regarding potential harmful effects and procedures for safe handling (29 CFR 1910.1048).

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Phenolic

APPEARANCE: Amber liquid

pH: 6 - 7 @ 100 g/L

PERCENT VOLATILE: 11 - 16%

VAPOR PRESSURE: Not Determined

VAPOR DENSITY: Not Determined

BOILING POINT: >100°C (212°F)

MELTING POINT: Not Applicable

FLASHPOINT AND METHOD: >212°F Method: TCC

SOLUBILITY IN WATER: Slightly soluble

MATERIAL SAFETY DATA SHEET

Durez Corporation
 Durez Canada Company, LTD.
 SumiDurez Canada GP

Date Issued: 04/17/2006
 MSDS No: M23539
 Date-Revised: 10/26/2007
 Revision No: 3

SPECIFIC GRAVITY: 1.16 - 1.18

(VOC): 2.000 to 5 %

10. STABILITY AND REACTIVITY

POLYMERIZATION: Resin will polymerize exothermically at temperatures in excess of 150°F. Hazardous polymerization will not occur under storage conditions recommended in Section 7.

CONDITIONS TO AVOID: Keep away from heat, sparks or open flame.

HAZARDOUS DECOMPOSITION PRODUCTS: Complete combustion yields carbon dioxide and water. Trace amounts of formaldehyde and phenol may be released during the curing process. The air concentration will be dictated by curing conditions, room ventilation and production rates. Airborne monitoring should be conducted to accurately determine the level of these substances in the air. For formaldehyde, symptoms of exposure including eye, nose, throat, and upper respiratory tract irritation, tearing and nose stuffiness usually are initially experienced at air concentrations in the range of 0.2 - 1.0 ppm and become more severe above 1 ppm. For exceptionally sensitive individuals, symptoms may appear at far lower concentrations. In laboratory tests, formaldehyde has been shown to be carcinogenic in rats. There is no conclusive evidence regarding the carcinogenicity of formaldehyde in man. Formaldehyde is listed by NTP as reasonably anticipated to be carcinogenic, and by IARC as a group 1 carcinogen. OSHA, in its formaldehyde Standard (29 CFR 1910.1048) considers formaldehyde to be a potential carcinogen. Phenol vapors are irritating to the eyes, skin, and respiratory tract. At airborne levels of up to at least 4 ppm, all phenol absorbed in the lung is excreted within 24 hours.

INCOMPATIBLE MATERIALS: Do not mix with strong acids.

11. TOXICOLOGICAL INFORMATION

ACUTE

| Chemical Name | ORAL LD ₅₀ (rat) | DERMAL LD ₅₀ (rabbit) | INHALATION LC ₅₀ (rat) |
|---------------|-----------------------------|----------------------------------|-----------------------------------|
| Formaldehyde | 100 mg/kg | 270 µL/kg | 454 mg/m ³ /4H Mouse |

NOTES: Formaldehyde, polymer with ammonia and phenol is used in the manufacture of this product. The following acute toxicology data are based on tests done for one product from a family of products. This substance is practically non-toxic by the oral, dermal, and inhalation routes. It is slightly irritating to the eyes. It is non-irritating to the skin.

Formaldehyde may be absorbed through the skin. Formaldehyde may cause allergic skin sensitization reactions. Formaldehyde may irritate or burn the skin and eyes. Formaldehyde is a lung sensitizer, causing an asthma-like allergy. Future exposures may cause allergy attacks with shortness of breath, wheezing, cough and chest tightness. Repeated exposure may cause bronchitis.

CARCINOGENICITY

MATERIAL SAFETY DATA SHEET

Durez Corporation

Durez Canada Company, LTD.

SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

| Chemical Name | NTP Status | IARC Status | OSHA Status | Other |
|---------------|--|---|--|--|
| Formaldehyde | Reasonably Anticipated To Be A Carcinogen (Possible Select Carcinogen) | Monograph 62, 1995 (Group 2A (probably carcinogenic to humans)) | 0.75 ppm TWA; 2 ppm STEL; 0.5 ppm Action Level (Irritant and potential cancer hazard - see 29 CFR 1910.1048) | ACGIH: A2 - Suspected Human Carcinogen NIOSH: Potential occupational carcinogen |

Notes: Contains a listed carcinogen. Formaldehyde is genotoxic in several in vitro test systems. Prolonged or repeated inhalation exposure may result in respiratory changes.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: There is no significant environmental fate and effects data available. This product may have trace levels of chemicals that have fate and effects properties of their own. Due caution should be exercised to avoid accidental releases of this product to aquatic or terrestrial environments.

GENERAL COMMENTS:

No ecotoxicity testing has been performed on this material. Ecotoxicity data for certain individual components are listed below.

Component Analysis - Ecotoxicity - Aquatic Toxicity

Formaldehyde (50-00-0)

| Test & Species | Data | Conditions |
|--|-----------|--------------|
| 96 Hr LC50 fathead minnow | 24.1 mg/l | flow-through |
| 96 Hr LC50 bluegill | 0.10 mg/l | flow-through |
| 5 min EC50 Photobacterium phosphoreum | 9.0 mg/l | |
| 15 min EC50 Photobacterium phosphoreum | 7.26 mg/l | |
| 25 min EC50 Photobacterium phosphoreum | 6.81 mg/l | |
| 96 Hr EC50 water flea | 20 mg/l | |

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of all waste and contaminated material in accordance with all applicable federal, state and local health and environmental regulations.

RCRA HAZARD CLASS: Component Waste Numbers
Formaldehyde (50-00-0) RCRA: waste number U122

MATERIAL SAFETY DATA SHEET

Durez Corporation

Durez Canada Company, LTD.

SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

GENERAL COMMENTS: Waste product is not considered to be listed hazardous waste under 40 CFR Part 261. However, wastes should be tested using methods contained in 40 CFR Part 261 to determine if the waste meets applicable definitions of characteristic hazardous waste.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

OTHER SHIPPING INFORMATION: This product may be regulated by the DOT because it could contain a reportable quantity (RQ) of a Hazardous Substance. Please examine the quantity per package for the Hazardous Substance(s).

Contact (716) 286-0112 for classification assistance.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

FIRE: No **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

EPCRA SECTION 313 SUPPLIER NOTIFICATION

| Chemical Name | Wt. % | CAS |
|---------------|------------|-------------|
| Formaldehyde | 0.1 - 0.95 | 000050-00-0 |

TITLE III NOTES: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4). SARA Section 313 requires a notice to be sent to customers that repackage or redistribute this product.

Formaldehyde (50-00-0)

SARA 302: 500 lb TPQ

SARA 313: 0.1% de minimis concentration

CERCLA: 100 lb final RQ; 45.4 kg final TQ

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

| Chemical Name | Wt. % | CERCLA RQ |
|---------------|------------|-----------|
| Formaldehyde | 0.1 - 0.95 | 100 lbs. |

TSCA (TOXIC SUBSTANCE CONTROL ACT)

| Chemical Name | CAS |
|---|-------------|
| Benzenetrimethanol, ar-(2-propenyloxy)- | 064051-40-7 |
| Benzenedimethanol, ar-(2-propenyloxy) | 028655-63-2 |
| Benzenemethanol, (2-propenyloxy) | 028655-62-1 |
| Formaldehyde | 000050-00-0 |

MATERIAL SAFETY DATA SHEET

Durez Corporation

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SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

TSCA STATUS: All ingredients in this mixture are in compliance with TSCA.

REGULATIONS

STATE REGULATIONS

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|--------------|---------|-----|-----|-----|-----|-----|-----|
| Formaldehyde | 50-00-0 | Yes | Yes | Yes | Yes | Yes | Yes |

CALIFORNIA PROPOSITION 65

| Chemical Name | Wt. % | Listed |
|---------------|------------|----------|
| Formaldehyde | 0.1 - 0.95 | • Cancer |

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS# | Minimum Concentration |
|--------------|---------|---|
| Formaldehyde | 50-00-0 | 0.1%; English Item 781; French Item 918 |

WHMIS CLASS: D1A, D2A, D2B

GENERAL COMMENTS: Component Analysis - Inventory

| Component | CAS # | TSCA | DSL | EINECS |
|--|------------|------|-----|--------|
| Formaldehyde, polymer with 3-chloro-1-propene and phneol | 28470-78-2 | Yes | Yes | No |
| Benzenetrimethanol, ar-(2-propenyloxy)- | 64051-40-7 | Yes | No | Yes |
| Benzenedimethanol, ar-(2-propenyloxy)- | 28655-63-2 | Yes | No | Yes |
| Benzenemethanol, (2-propenyloxy) | 28655-62-1 | Yes | Yes | Yes |
| Formaldehyde | 50-00-0 | Yes | Yes | Yes |

NOTE: Polymers composed entirely of EINECS listed monomers are exempt from notification on the EINECS list (67/548/EEC).

16. OTHER INFORMATION

REVISION SUMMARY: Revision #: 3 This MSDS replaces the August 10, 2006 MSDS. Any changes in information are as follows: In Section 10 Stability

MATERIAL SAFETY DATA SHEET

Durez Corporation

Durez Canada Company, LTD.

SumiDurez Canada GP

Date Issued: 04/17/2006

MSDS No: M23539

Date-Revised: 10/26/2007

Revision No: 3

HMIS RATING

| | | |
|----------------------|---|---|
| HEALTH: | * | 1 |
| FLAMMABILITY: | | 1 |
| PHYSICAL HAZARD: | | 2 |
| PERSONAL PROTECTION: | | |

ADDITIONAL MSDS INFORMATION:

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

The exact composition of this material is a Trade Secret. The components are listed in the TSCA Chemical Substance Inventory. In case of a medical emergency, the specific chemical identity of the material will be provided to the treating physician or nurse when the information is needed for proper emergency or first aid treatment. A written statement of confidentiality agreement will be required as soon as circumstances permit as provided by 20CFR 1910.1200.

For additional non-emergency health, safety or environmental information:
Telephone: (716) 286-0112

Write to:

Durez Corporation
Technical Information
5000 Packard Road
Niagara Falls, NY 14304

COMMENTS: FOR INDUSTRIAL USE ONLY.

MANUFACTURER DISCLAIMER: *Please Note: HMIS ratings involve interpretations of data that may vary from company to company. HMIS ratings are intended for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be assessed.*



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 3 0 0 3 5 38 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.** 3

I. FACILITY INFORMATION

CHEMICAL LOCATION **Raw Material Storage** 4

CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # **1** 6 GRID # **J5** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **DER 331 EPOXY RESIN** WASTE Yes 8 TRADE SECRET Yes No 11
* If EPCRA see instructions

COMMON NAME **EPOXY RESIN** 9 An EHS Chemical Yes No 12
*If EHS is "Yes", all amounts must be LBS

CAS # **25085-99-8** 10 FIRE CODE HAZARD CLASSES (supplied by GGFDF) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **100** 19 MAXIMUM DAILY AMOUNT **600** 20 ANNUAL WASTE AMOUNT **NONE** 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **50 GAL DRUM** 25
 c. POUNDS d. TONS
*If EHS, amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|---------|---|--|----------------------|
| 100% 29 | Bisphenol A | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 31 | 25085-99-8 32 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

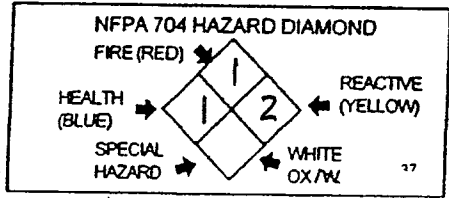
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



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Material Safety Data Sheet

The Dow Chemical Company

Product Name D E R * 331 EPOXY RESIN

Issue Date 08/29/2006
Print Date 30 Aug 2006

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
D E R * 331 EPOXY RESIN

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact 989-636-4400
Local Emergency Contact 989-636-4400

2. Hazards Identification

Emergency Overview

Color: White to yellow

Physical State: Liquid

Odor: Mild

Hazards of product:

WARNING! May cause allergic skin reaction. May cause eye irritation. May cause skin irritation.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause eye irritation. Corneal injury is unlikely.

Skin Contact: Prolonged or repeated contact may cause skin irritation.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Skin Sensitization: Has caused allergic skin reactions in humans.

Inhalation: Vapors are unlikely due to physical properties.

* Indicates a Trademark

Ingestion Very low toxicity if swallowed Harmful effects not anticipated from swallowing small amounts

Cancer Information Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBA is carcinogenic.

3. Composition Information

| Component | CAS # | Amount |
|--|------------|---------|
| Reaction product Bisphenol A-(epichlorohydrin), epoxy resin (number average molecular weight <= 700) | 25085-99-8 | 100.0 % |

See also section 15 of this SDS

4. First-aid measures

Eye Contact Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Inhalation: Move person to fresh air, if effects occur, consult a physician.

Ingestion No emergency medical treatment necessary.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.

Hazardous Combustion Products During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to Phenolics, Carbon monoxide, Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Absorb with materials such as Sand, Polypropylene fiber products, Polyethylene fiber products. Remove residual with soap and hot water. Collect in suitable and properly labeled containers. Residual can be removed with solvent. Solvents are not recommended for clean-up unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent Safety Data Sheet for handling information and exposure guidelines. See Section 13, Disposal Considerations, for additional information.

Personal Precautions Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Avoid contact with skin and clothing. Wash thoroughly after handling. Avoid use of electric band heaters. Failures of electric band heaters have been reported to cause drums of liquid epoxy resin to explode and catch fire. Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire.

Storage

Recommended pumping and storage temperature for bulk shipments is 60°C (140°F). Additional storage and handling information on this product may be obtained by calling your Dow sales or customer service contact. Ask for a product brochure.

| Shelf life: Use within | Storage temperature |
|------------------------|---------------------|
| 24 Months | 2 - 43 °C |

8. Exposure Controls / Personal Protection

Exposure Limits

None established

Personal Protection

Eye/Face Protection: Use safety glasses.

Skin Protection Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include Butyl rubber, Ethyl vinyl alcohol laminate ("EVAL"), Nitrile, Neoprene, Polyvinyl chloride ("PVC" or "vinyl"). **NOTICE** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body

|| reactions to glove materials, as well as the instructions/specifications provided by the glove supplier

|| **Respiratory Protection:** No respiratory protection should be needed
 || **Ingestion.** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

|| **Ventilation** Good general ventilation should be sufficient for most conditions

9. Physical and Chemical Properties

| | |
|---|--|
| Physical State | Liquid |
| Color | White to yellow |
| Odor | Mild |
| Flash Point - Closed Cup | 252 °C (486 °F) <i>PMCC, ASTM D93</i> |
| Flammable Limits In Air | Lower Not applicable Upper Not applicable |
| Autoignition Temperature | Not applicable |
| Vapor Pressure | Not applicable |
| Boiling Point (760 mmHg) | Not applicable |
| Vapor Density (air = 1) | Not applicable |
| Specific Gravity (H ₂ O = 1) | 1.16 <i>Literature</i> |
| Liquid Density | 1.156 - 1.166 g/cm ³ @ 25 °C <i>ASTM D4052</i> |
| Freezing Point | Not Determined |
| Melting Point | Not Determined |
| Solubility in Water (by weight) | Insoluble |
| pH | Not Determined |
| Dynamic Viscosity | 11,000 - 13,500 mPa s @ 25 °C <i>ASTM D445</i> |

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7
Conditions to Avoid Avoid temperatures above 300°C (572°F). Potentially violent decomposition can occur above 350°C (662°F). Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

Incompatible Materials Avoid contact with oxidizing materials. Avoid contact with Acids. Bases. Avoid unintended contact with amines.

Hazardous Polymerization

Will not occur by itself. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide, and water.

11. Toxicological Information

Acute Toxicity
 Ingestion

LD50, Rat > 5,000 mg/kg

Skin Absorption

LD50, Rabbit 20,000 mg/kg

Sensitization

Skin

Has caused allergic skin reactions in humans. Did not cause allergic skin reactions when tested in mice

Repeated Dose Toxicity

Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects

Chronic Toxicity and Carcinogenicity

Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBA is carcinogenic.

Developmental Toxicity

Resins based on the diglycidyl ether of bisphenol A (DGEBA) did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

Reproductive Toxicity

In animal studies, did not interfere with reproduction

Genetic Toxicology

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
 Potential for mobility in soil is low (Koc between 500 and 2000).
 Henry's Law Constant (H): < 6.94E-09 atm*m3/mole, 25 °C. Estimated.
 Partition coefficient, soil organic carbon/water (Koc) 1,800 - 4,400. Estimated 1,800 - 4,400.
 Estimated.

Persistence and Degradability

Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

Indirect Photodegradation with OH Radicals

| Rate Constant | Atmospheric Half-life | Method |
|----------------|-----------------------|-----------|
| 6.69E-11 cm3/s | 1.92 h | Estimated |

OECD Biodegradation Tests.

| Biodegradation | Exposure Time | Method |
|----------------|---------------|----------------|
| 12 % | 28 d | OECD 302B Test |

Biological oxygen demand (BOD)

| BOD 5 | BOD 10 | BOD 20 | BOD 28 |
|-------|--------|---------|--------|
| | | < 2.5 % | |

Theoretical Oxygen Demand: 2.35 mg/mg

ECOTOXICITY

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species tested). Toxicity to aquatic species occurs at concentrations above material's water solubility.

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), 96 h: 3.1 mg/l

Aquatic Invertebrate Acute Toxicity

|| EC50, water flea Daphnia magna, 48 h, immobilization 1.4 - 1.7 mg/l

Toxicity to Micro-organisms

|| IC50, bacteria, Growth inhibition, 18 h > 42.6 mg/l

| Aquatic Invertebrates | Species | Test Type | Endpoint | Exposure Time |
|--|---------|-----------|----------|---------------|
| Chronic Toxicity Value ChV Value mg/l | | | | |

| | | | | |
|-----------|-----------------------------|--|------------------------|------|
| 0.55 mg/l | water flea Daphnia magna | | number of offspring | 21 d |
|-----------|-----------------------------|--|------------------------|------|

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information

|| DOT Non-Bulk
NOT REGULATED

|| DOT Bulk
NOT REGULATED

|| IMDG
NOT REGULATED

|| ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

| | |
|-----------------------------------|-----|
| Immediate (Acute) Health Hazard | Yes |
| Delayed (Chronic) Health Hazard | No |
| Fire Hazard | No |
| Reactive Hazard | No |
| Sudden Release of Pressure Hazard | No |

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute

Pennsylvania (Worker and Community Right-To-Know Act) Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute

European Inventory of Existing Commercial Chemical Substances (EINECS)

Components of this product are not listed on EINECS because they are polymers or "no-longer polymers" marketed before the enforcement of the 7th Amendment to Directive 67/548/EEC

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed

Reaction product Bisphenol A-(epichlorohydrin), epoxy resin (number average molecular weight <= 700) can also be described by the CAS# 025068-38-6

16. Other Information

Product Literature

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact. Ask for a product brochure

Hazard Rating System

| | | | |
|-------------|---------------|-------------|-------------------|
| NFPA | Health | Fire | Reactivity |
| | 1 | 1 | 2 |

Recommended Uses and Restrictions

Used in applications such as Adhesive Casting Tooling Civil engineering Composites Automotive coatings Can coatings Coil coatings Marine and protective coatings Photocure industrial coating Potting and encapsulation

Revision

Identification Number 79630 / 1001 / Issue Date 08/29/2006 / Version 2.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document

Legend

| | |
|---------|--|
| N/A | Not available |
| W/W | Weight/Weight |
| OEL | Occupational Exposure Limit |
| STEL | Short Term Exposure Limit |
| TWA | Time Weighted Average |
| ACGIH | American Conference of Governmental Industrial Hygienists, Inc |
| DOW IHG | Dow Industrial Hygiene Guideline |
| WEEL | Workplace Environmental Exposure Level |
| HAZ_DES | Hazard Designation |

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD

DELETE

REVISED 1

Page _____ of _____ 2

| | | | | |
|--------------|-----------|----|---------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 | BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|----|---------------|---------------------------------------|

I. FACILITY INFORMATION

| | |
|-------------------|-----|
| CHEMICAL LOCATION | LAB |
|-------------------|-----|

| | | | | | | | | |
|-----------------------------|---|---|-------|---|---|--------|----|---|
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 | MAP # | 1 | 6 | GRID # | J7 | 7 |
|-----------------------------|---|---|-------|---|---|--------|----|---|

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|-----------------|-------|---|---|--------------|---|----|
| CHEMICAL NAME | IPS 1000 SERIES | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|-----------------|-------|---|---|--------------|---|----|

| | | | | | |
|-------------|------------------|---|-----------------|---|----|
| COMMON NAME | POLYETHER POLYOL | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12 |
|-------------|------------------|---|-----------------|---|----|

| | | | |
|-------|----|--|----|
| CAS # | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFDD) | 13 |
|-------|----|--|----|

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input type="checkbox"/> a. PURE <input checked="" type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | |
|--------------------------------------|---|----|-----------------------|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE <input type="checkbox"/> d. ACUTE HEALTH <input type="checkbox"/> e. CHRONIC HEALTH | 18 |
|--------------------------------------|---|----|-----------------------|--|----|

| | | | | | | | | | | |
|----------------------|---|----|----------------------|---|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 1 | 19 | MAXIMUM DAILY AMOUNT | 1 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|---|----|----------------------|---|----|---------------------|------|----|------------------|----|

| | | | | | | | | |
|-------|---|----|--------------|----------|----|-------------------|--------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | PT CAN | 25 |
|-------|---|----|--------------|----------|----|-------------------|--------|----|

| | | |
|--|--|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) <input checked="" type="checkbox"/> m. CYLINDER <input checked="" type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|--|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|------|---|---|--------------|
| 1 96 | 29 HYDROXYL TERMINATED POLYOL | 30 <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 9082-00-2 |
| 2 12 | 29 TERTIARY AMINE | 30 <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 N.E. |
| 3 | 29 | 30 <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 4 | 29 | 30 <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |
| 5 | 29 | 30 <input type="checkbox"/> Yes <input type="checkbox"/> No | 31 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

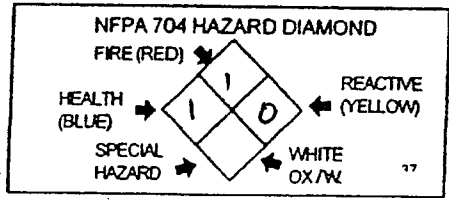
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



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651072



INNOVATIVE POLYMER SYSTEMS, INC.

8530 Milliken Avenue
Rancho Cucamonga, CA 91730
TEL 909-941-4999 FAX 909-941-4944
www.ipolymer.com

Material Safety Data Sheet

Code: R "B"
Issue date: 3-1-96
Updated: 8/3/07

I. Product Identification - Rigid "B" Component

Product Name: Two-Component Water-Blown Foam
Product Code: IPS 1000 Series, 1500 Series, 1600 Series, 2000, 2010, 2034, 2305, 2501, 3000, 3001, 3002, 3245, 3770, 8000, and 8001
(Including all designations such as -2.5, -4, -10, etc. following product code)
Chemical Family: Polyether Polyol
Chemical Name: Polyether Polyol
Synonyms: Polyol, Urethane Resin. "B" Component
CAS Number: N/A
TSCA Status: On Inventory

II. Hazardous Ingredients*

| Components: | Approx. % | Current TLV/PEL |
|--|-----------|-----------------|
| Hydroxyl Terminated Poly (Oxyalkylene) Polyether Cas# 9082-00-2 | 96 | N.E. |
| Tertiary Amine Bearing Compounds Cas# N.E. | <2 | N.E. |

* Ingredients not precisely identified are proprietary or not hazardous. Values are not product specifications.

III. Physical Data

Appearance: Viscous Liquid
Color: Clear Amber
Odor: Slight Ammonia
Molecular WT: N/A
Melt Point / Freeze Point: <32°F. (<0°C.)
Boiling Point: Decomposes
Vapor Pressure: Nil
Vapor Density (Air = 1): > 1.0
Specific Gravity: 1.07
Solubility In Water: Slightly Soluble
Voc %: 0

IV. Fire & Explosion Data

Flash Point: 325°F. (163°C.) PMCC
Flammable Limits In Air By Volume -
Lower: N.E (Nonvolatile Fluid)
Upper: N.E (Nonvolatile Fluid)
Extinguishing Media: Dry chemical extinguishers such as Monoammonium Phosphate, Potassium Sulphate, Potassium Chloride. Additionally, Carbon Dioxide, high expansion (Protenic) chemical foam, water spray for large fires.
Special Fire Fighting Procedure: Do not direct solid water stream or foam into hot, burning pools; this may cause frothing and increase fire intensity. Use self-contained breathing apparatus and body covering protective clothing; burning can produce oxides of carbon and nitrogen.

V. Health Hazard Information**Animal Toxicity**

| | |
|-------------------------------|-----------------------|
| Oral, LD50 (ingestion): | >5000 MG/KG (Rats) |
| Dermal, LDS50 (skin contact): | >5000 MG/KG (Rabbits) |
| Inhalation, LC50 (4 HR): | N.E. |
| Eyes: | N.E. |
| Skin: | N.E. |
| Aquatic, LC50 (24 HR): | N.E. |

Human Effects of Overexposure

Inhalation: May cause irritation to the throat and respiratory passages but at room temperature, vapor inhalation is not considered hazardous.

Skin: This product contains amine catalyst and will cause irritation to the skin after prolonged exposure. Some individuals may be more sensitive to exposure.

Ingestion: This is not considered a common occupation route of exposure, and no observable effects have been demonstrated.

Threshold Limit Value (ACGIH): No TLV has been established for this product as a system.

Permissible Exposure Limit (OSHA): Same as above.

Suspected Carcinogenic:

Federal OSHA: Not regulated.

CAL OSHA: Not regulated.

NTP: Not listed.

IARC: Not listed.

Medical conditions aggravated by exposure: No data available.

VI. Emergency & First Aid Procedures

Eye contact: Flush with clean, lukewarm water at low pressure for at least 15 minutes, occasionally lifting eyelids. Consult a physician immediately.

Skin Contact: Remove contaminated clothing. Wash exposed area with warm water thoroughly. Contaminated clothing should be properly laundered before reusing.

Inhalation: Not considered hazardous in an industrial situation.

Ingestion: Induce vomiting. Never give anything to drink to an unconscious person or induce vomiting in an unconscious person.

Note to Physician: Basically, treatment is symptomatic.

VII. Employee Protection Recommendations

Eye Protection: Liquid chemical goggles or full face shield. No contact lenses should be worn.

Skin Protection: Chemical resistant gloves such as natural rubber, or polyvinyl alcohol. Cover as much as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

Respiratory Protection: This product has demonstrated no observable effects at room temperature, however, it is highly recommended that an air purifying respirator with organic filter cartridges be worn. In addition, in any spray application, a supplied air source must be provided.

Ventilation: Natural or mechanical. Local exhaust will keep the TLV below minimum in most cases. Spills or other emergencies may require more forceful ventilation means.

Other: Safety showers and eye wash stations should be provided in all work areas. All employees should be properly trained.

VIII. Reactivity Data

| | |
|---------------------------------------|--|
| Stability: | Stable. |
| Polymerization: | Will not occur. |
| Incompatibility (materials to avoid): | Avoid contact with isocyanates and other substances that react with hydroxyl groups. |
| Hazardous Decomposition Products: | Aliphatic fragments, CO, NH ₃ , CO ₂ . |

IX. Spill Or Leak Procedures

Steps to be taken in case material is spilled or released:

Contain the spilled material and then cover with a loose, absorbent material such as oil-dry, vermiculite, sawdust, or fuller's earth. Shovel waste material into proper waste containers. Wash the contaminated areas with hot soapy water thoroughly. Ventilate area to remove vapors.

Waste Disposal Methods: Waste material may be incinerated or disposed of under local, state and federal regulations controlling environmental protection.

X. Special Precautions & Storage Data

| | |
|--|--|
| Storage Temperature (Min/ Max): | 65°F. (18°C.) to 75°F. (24°C.) |
| Average Shelf Life: | 6 months from date of mfg. |
| Special Sensitivity (heat, light, moisture): | This product is hygroscopic. Containers should be tightly sealed to prevent moisture contamination. Do not expose to high temperatures for any length of time as aldehydes may be formed. |
| Precautions in Handling and Storage: | If contamination with isocyanates is suspected, do not re-seal container because of possible rupture due to pressure buildup. Always slowly vent container when opening to relieve any pressure buildup. |

XI. Shipping Data

| | |
|----------------------------|------------------------|
| Technical Shipping Name: | Polyether Polyol Blend |
| Dot Hazard Classification: | Non-regulated |
| Freight Class Bulk: | Polypropylene Glycol |
| Freight Class Package: | Polypropylene Glycol |
| Product Label: | "B" Component Polyol |
| Place Cards Required: | None |
| HMIS: | F-1, H-1, R-0 |

For further information, contact Innovative Polymer Systems, Inc. at (909) 941-4999

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Innovative Polymer Systems, Inc. The data on these sheets relates only to the specific material designated herein. Innovative Polymer Systems, Inc. assumes no legal responsibility for use or reliance upon this data.



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 30035 38 BUSINESS NAME ADVANCED CHEMISTRY & TECHNOLOGY, INC. 3

I. FACILITY INFORMATION

CHEMICAL LOCATION LAB 4
CONFIDENTIAL LOCATION Yes No 5 MAP # 1 6 GRID # J7 7

II. CHEMICAL INFORMATION

CHEMICAL NAME JB 1110 B EPOXY HARDENER WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME EPOXY HARDENER 9 An EHS Chemical Yes No 12
*If EPCRA see instructions
*If EHS is "Yes", all amounts must be LBS

CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 1 19 MAXIMUM DAILY AMOUNT 1 20 ANNUAL WASTE AMOUNT NONE 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE 365 DAYS 24 LARGEST CONTAINER 55 GAL 25
 c. POUNDS d. TONS
*If EHS amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER _____

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

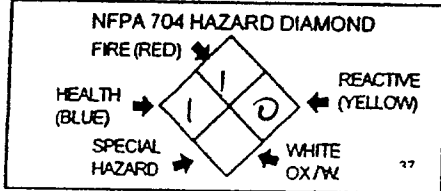
STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|----------|---|---|-------------|
| 1 >75 29 | MERCAPTAN/AMINE BLEND 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | N.A. 32 |
| 2 <25 29 | 2-OXEPANONE 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 502-44-3 32 |
| 3 29 | 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 4 29 | 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 5 29 | 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # UN1760 33 Refer to shipping papers or MSDS
DOT HAZARD CLASS 8 34 Refer to shipping papers or MSDS
EPCRA YES NO 35
X _____ 36 If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

MATERIAL SAFETY DATA SHEET

I. PRODUCT NAME JB1110B EPOXY HARDNER

| |
|--|
| Est. HMIS: Health: 3 Fire: 1 React: 1 |
|--|

SECTION I: GENERAL

Manufacturer: Advanced Adhesive Systems
681 North Mountain Rd
Newington, CT 06111

Emergency Phone Numbers: **800 255 3924** CHEM-TEL 24 HR
Chemical Family: Polyamide/amine-Mercaptan Blend

SECTION II: COMPOSITION

| CHEMICAL NAME | CAS # | PERCENT | EXPOSURE LIMITS |
|-----------------------|---------------|---------|-----------------|
| Mercaptan/Amine Blend | Not available | >75% | Not Established |
| 2-oxepanone | 502-44-3 | <25% | Not Established |

SARA Title III-Section 313: This product does not contain a toxic chemical in excess of 1% of the mixture (.1% if a listed carcinogen)

SECTION III: HAZARDS IDENTIFICATION

Appearance and odor: Slightly combustible liquid, amber color, strong mercaptan odor

Inhalation: Considered slightly toxic by inhalation. Can cause irritation of respiratory tract and nausea. Overexposure may cause delayed lung injury and chemical pneumonia

Eye Contact: May cause severe eye irritation and permanent damage

Skin Contact: May produce severe skin irritation and burns. May cause skin sensitization

Ingestion: Moderately toxic. Loss of consciousness may occur. Nausea, vomiting, dizziness, and drowsiness may occur

Special Health Effects: No additional medical information found

Chronic Health Effects: No chronic hazards have been observed (long term)

This product is NOT listed under: National Toxicology Program (NTP), Annual Report on Carcinogens, and International Agency for Research on Cancer (IARC) Monographs

California Proposition 65: This product contains no chemicals known to the state of California to cause birth defects, or reproductive toxicity

SECTION IV -FIRST AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult give oxygen. Seek immediate medical attention

Eye Contact: Rinse with clean water for 15-30 minutes. Seek immediate medical attention

| | |
|---------------|--|
| Skin Contact: | Remove contaminated clothing as needed. Wash skin thoroughly with mild soap/water. Flush with lukewarm water for 15 minutes. Seek immediate medical attention |
| Ingestion: | Immediately drink a large quantity of milk or water. Seek immediate medical attention |

SECTION V: FIRE FIGHTING MEASURES

| | |
|----------------------|--|
| Flash Point: | > 200°F |
| Extinguishing Media: | Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO ₂) to extinguish flames. |
| Fire Fighting: | Material will not burn unless preheated. Clear fire area of all non-emergency personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. Cool surrounding equipment, fire-exposed containers and structures with water. Container areas exposed to direct flame contact should be cooled with large quantities of water (500 gallons water per minute flame impingement exposure) to prevent weakening of container structure |

SECTION VI: ACCIDENTAL RELEASE MEASURES

May burn although not readily ignitable.

| | |
|----------------------|--|
| Protective Measures: | Wear appropriate personal protective equipment (refer to Section 8) when responding to spills. |
| Spill Management: | Use cautious judgment when cleaning up large spills. Shut off source of leak if safe to do so. Dike and contain spill. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. Contain run-off from residue flush and dispose of properly. Place in container for proper disposal. Prevent entry into waterways, sewer, basements or confined areas. For small spills: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal |
| Disposal: | Proper disposal should be evaluated based on regulatory status of this material (refer to Section 13), potential contamination from subsequent use and spillage, and regulations governing disposal in the local area |

Reporting: Notify authorities if any exposure to the general public or environment occurs or is likely to occur.

SECTION VII: HANDLING AND STORAGE

Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated contact with eyes, skin and clothing. Wash thoroughly after handling.

| | |
|-----------|--|
| Handling: | Some curing agents, e.g., aliphatic polyamines, can produce exothermic reactions that in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity. Surfaces that are |
|-----------|--|

sufficiently hot may ignite liquid material. This hardener may be handled, shipped and stored at ambient temperature in bulk. Keep away from heat, sparks and flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors have dissipated. Use explosion-proof ventilation to prevent vapor accumulation while in use. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. Keep containers closed when not in use. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures

Storage: Keep containers closed when not in use. Do not pressurize drum containers to empty. Avoid contact with hot liquid to prevent thermal burns. Containers, even those that have been emptied, can contain hazardous residues

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls. The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Appropriate measures include: Adequate ventilation to control airborne concentrations. Eye washes and showers for emergency use. Personal Protective Equipment: Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection: **Chemical goggles or Safety glasses with side shields**

Skin Protection: Use protective clothing that is chemical resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Respiratory If engineering controls do not maintain airborne concentrations to a level that is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:
Air-Purifying Respirator for Organic Vapors, Supplied-Air Respirator

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Light yellow liquid with mercaptan strong odor
Flash Point: > 200 °F
Solubility (in Water): Slight
Specific Gravity: 1.13
Stability: Stable
Vapor Density: (Air=1) > 1 Vapor Pressure < 1
% Voc's Not determined

Vapor pressure low
Boiling point Not determined

SECTION X: REACTIVITY AND STABILITY

Stability: Material is stable under normal conditions.
Hazardous polymerization will not occur
Conditions to Avoid: Avoid high temperatures. Avoid heat and open flames.
Materials to Avoid: Can react vigorously with strong oxidizing agents. Reaction with large volumes of resins may produce considerable heat and possible violent decomposition.

SECTION XI: TOXICOLOGICAL INFORMATION

Acute Toxicity: ND Oral toxicity >3.0 gram/kg
Mutagenicity: ND Skin irritation 6.62 scale 0-8

SECTION XII: ENVIRONMENTAL FATE AND EFFECTS

This section will be updated as ecological reviews are completed.

SECTION XIII: DISPOSAL CONSIDERATIONS

General: If this material becomes a waste, it may be incinerated in accordance with applicable laws. Place in an appropriate disposal facility in compliance with local regulations. Use registered transporters.

SECTION XIV: TRANSPORT INFORMATION

US Department of Transportation Classification:
This material is listed under DOT regulations under 49 CFR Parts 171-180
DOT HAZARDOUS MATERIAL: CORROSIVE Liquid, NOS: (ZAM00100) MERCAPTAN AMINE BLEND

HAZARD CLASS: 8 UN ID: UN 1760 PACKAGING GROUP III

IATA: CARGO AIRCRAFT, <60 LITERS, PASSENGER <5 LITERS

DISCLAIMER OF LIABILITY

This information is furnished without warranty, representation, or license of any kind, except that this information is accurate to the best of the Supplier's knowledge, or is obtained from sources believed by the Supplier to be accurate. No warranty is expressed or implied regarding the accuracy of this information or the results to be obtained from its use thereof. The Supplier assumes no responsibility for injuries proximately caused by use of the Material if reasonable safety procedures are not followed as stipulated in this Data Sheet. Additionally, the Supplier assumes no responsibility for injuries proximately caused by abnormal use of the Material even if reasonable safety procedures are followed. Buyer assumes the risk in its use of the Material.

ADVANCED ADHESIVE SYSTEMS
681 N. Mountain Rd, Newington, CT 06111
860 953 4100

JB1110B Hardner 11/19/03 PAGE 5



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

| | | | |
|--------------|-----------|------------------|---------------------------------------|
| FACILITY ID# | 3 0 0 3 5 | 38 BUSINESS NAME | ADVANCED CHEMISTRY & TECHNOLOGY, INC. |
|--------------|-----------|------------------|---------------------------------------|

I. FACILITY INFORMATION

| | | | |
|-----------------------------|---|----------|----|
| CHEMICAL LOCATION | Raw Material Storage | | |
| CONFIDENTIAL LOCATION EPCRA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5 MAP # | 1 |
| | | 6 GRID # | J5 |

II. CHEMICAL INFORMATION

| | | | | | | | |
|---------------|------------------|-------|---|---|--------------|---|----|
| CHEMICAL NAME | NUOSPERSE FA-192 | WASTE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8 | TRADE SECRET | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11 |
|---------------|------------------|-------|---|---|--------------|---|----|

| | | | | | |
|-------------|------------------|---|-----------------|--|----|
| COMMON NAME | DISPERSING AGENT | 9 | An EHS Chemical | <input type="checkbox"/> Yes <input type="checkbox"/> No | 12 |
|-------------|------------------|---|-----------------|--|----|

| | | | | | |
|-------|------------|----|--|--|----|
| CAS # | 69412-53-3 | 10 | FIRE CODE HAZARD CLASSES (supplied by GGFDF) | | 13 |
|-------|------------|----|--|--|----|

| | | | | | | | |
|----------------------------|---|----|-------------|---|----|--------|----|
| TYPE (Check one item only) | <input checked="" type="checkbox"/> a. PURE <input type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE | 14 | RADIOACTIVE | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15 | CURIES | 16 |
|----------------------------|---|----|-------------|---|----|--------|----|

| | | | | | |
|--------------------------------------|---|----|-----------------------|--|----|
| PHYSICAL STATE (Check one item only) | <input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS | 17 | FED HAZARD CATEGORIES | <input type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE <input type="checkbox"/> d. ACUTE HEALTH <input type="checkbox"/> e. CHRONIC HEALTH | 18 |
|--------------------------------------|---|----|-----------------------|--|----|

| | | | | | | | | | | |
|----------------------|-----|----|----------------------|-----|----|---------------------|------|----|------------------|----|
| AVERAGE DAILY AMOUNT | 250 | 19 | MAXIMUM DAILY AMOUNT | 500 | 20 | ANNUAL WASTE AMOUNT | NONE | 21 | STATE WASTE CODE | 22 |
|----------------------|-----|----|----------------------|-----|----|---------------------|------|----|------------------|----|

| | | | | | | | | |
|-------|---|----|--------------|----------|----|-------------------|-------------|----|
| UNITS | <input type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input checked="" type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS | 23 | DAYS ON SITE | 365 DAYS | 24 | LARGEST CONTAINER | 50 GAL DRUM | 25 |
|-------|---|----|--------------|----------|----|-------------------|-------------|----|

| | | |
|--|---|----|
| STORAGE CONTAINER (Check all that apply) | <input type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> c. TANK INSIDE BLDG <input type="checkbox"/> d. STEEL DRUM <input type="checkbox"/> e. PLASTIC DRUM <input type="checkbox"/> f. NONMETALLIC DRUM <input checked="" type="checkbox"/> g. METAL CONTAINER <input type="checkbox"/> h. CARBOY <input type="checkbox"/> i. VAT <input type="checkbox"/> j. FIBER DRUM <input type="checkbox"/> k. BAG(S) <input type="checkbox"/> l. BOX(S) <input type="checkbox"/> m. CYLINDER <input type="checkbox"/> n. GLASS CONTAINER <input type="checkbox"/> o. PLASTIC CONTAINER <input type="checkbox"/> p. IN MACH OR EQUIP <input type="checkbox"/> q. TANK WAGON <input type="checkbox"/> r. RAIL CAR <input type="checkbox"/> s. TOTE BIN <input type="checkbox"/> t. OTHER | 26 |
|--|---|----|

| | | |
|------------------|--|----|
| STORAGE PRESSURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT | 27 |
|------------------|--|----|

| | | |
|---------------------|--|----|
| STORAGE TEMPERATURE | <input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC | 28 |
|---------------------|--|----|

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----|---|--|-----------|
| 29 | nonylphenol, branched ethoxylated | <input type="checkbox"/> Yes <input type="checkbox"/> No | 6941253-3 |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

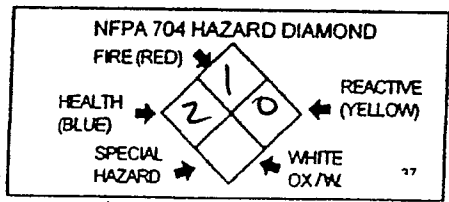
PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS

DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS

EPCRA YES NO 35

X _____ 36
If EPCRA, Please Sign Here



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Sasol Servo BV



NUOSPERSE FA 192

Page: 1/5

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date: 02/06/2003

Reviewed on: 07/15/2002

1. Identification of substance

- Product details
- Trade name: **NUOSPERSE FA 192**
- Application of the substance / the preparation
Emulsifier
Dispersing agent, Dispersant
- Manufacturer/Supplier:
Sasol Servo BV
Langestraat 167 7491 AE
P.O.Box 1 7490 AA
DELFTEN - The Netherlands
tel: +31/74/3775000
fax: +31/74/3775075
- Information department:
QA/S&E
Contact: Mr. Postma
Tel: +31/74/3775303 or /3775307
Fax: +31/74/3775085

2. Composition/Data on components

- Chemical characterization:
- | CAS No. | Description: |
|------------|--|
| 69412-53-3 | nonylphenol, branched, ethoxylated, phosphated |
- Identification number(s):
- EINECS Number: Polymer

3. Hazards identification

- Hazard description: Xi Irritant
- Information pertaining to particular dangers for man and environment
R 38 Irritating to skin.
R 41 Risk of serious damage to eyes.
R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- Classification system
- NFPA-Ratings for USA
Health = 0
Fire = 1
Reactivity = 0

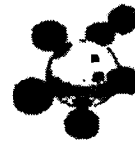
4. First aid measures

- After inhalation Seek medical treatment in case of complaints.
- After skin contact
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing If symptoms persist consult doctor.

5. Fire fighting measures

- Suitable extinguishing agents
Water spray, CO2, extinguishing powder, foam.
 - Protective equipment: Wear fully protective suit.
- USA

Sasol Servo BV



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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date: 02/06/2003

Reviewed on: 07/15/2002

Trade name: NUOSPERSE FA 192

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the collected material according to regulations.
Use neutralizing agent.

7 Handling and storage

- **Handling**
- **Information for safe handling:**
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**
No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Unsuitable material for receptacle: carbon steel.
Suitable material for receptacles: stainless steel and plastics.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.

8 Exposure controls and personal protection

Components with limit values that require monitoring at the workplace:
Not required.

- **Additional information:**
The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves**
PVC
Neoprene
- **Penetration time of glove material**
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
- **Eyes protection:** Face protection
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

- **General information**

(Contd. on page 3)

USA

Sasol Servo BV



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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date: 02/06/2003

Reviewed on: 07/15/2002

Trade name: NUOSPERSE FA 192

(Contd. of page 2)

- Form: Fluid
- Color: Clear
- Odor: Nearly odorless

| | Value/Range | Unit | Method |
|---|----------------------------------|-----------------------|-------------|
| - Change in condition | | | |
| - Melting point/Melting range: | -5 | ° C | DGF-C-IV-3A |
| - Boiling point/Boiling range: | > 250 | ° C | |
| - Flash point: | > 200 | ° C | ASTM D92 |
| - Ignition temperature: | > 400 | ° C | |
| - Decomposition temperature: | > 150 | ° C | |
| - Danger of explosion: Product does not present an explosion hazard. | | | |
| - Density: | at 20 ° C | 1.1 g/cm ³ | DIN 53217/3 |
| - solubility in / Miscibility with | | | |
| - Water: | Fully miscible | | |
| - Organic solvents: | Soluble in many organic solvents | | |
| - pE-value: | (10 g/l) at 20 ° C | < 3 | ASTM D1172 |
| - Viscosity: | | | |
| - dynamic: | at 25 ° C | < 4000 mPas | DIN 53015 |

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
- Dangerous reactions No dangerous reactions known
- Dangerous products of decomposition:
No dangerous decomposition products known

11 Toxicological information

- Acute toxicity:

LD/LC50 values that are relevant for classification:

- LD50 Product; oral: > 5000 mg/kg (rat).

- Primary irritant effect:

- on the skin: Irritant to skin and mucous membranes.
- on the eye: Strong irritant with the danger of severe eye injury.
- sensitization: No sensitizing effects known.

12 Ecological information

- Information about elimination (persistence and degradability):
Biodegradability: < 80%.

Aquatic toxicity:

- fish toxicity: LC50: 15-25 mg/l (Brachydanio rerio, 96 hr., analogy)

(Contd. on page 4)

-----USA

Sasol Servo BV



NUOSPERSE FA 192

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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date: 02/06/2003

Reviewed on: 07/15/2002

Trade name: NUOSPERSE FA 192

(Contd. of page 3)

Behavior in sewage processing plants:
In case of judicious use the product does not cause disturbances in water purification plants, according to experiences made so far.

- General notes:
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

12 Disposal considerations

- Product:
Recommendation
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
Recommendation:
With due observance of local regulations, for instance transport to refuse incinerator.
- Recommended cleansing agent: water, if necessary with cleansing agents.

14 Transport information

- Transport/Additional information:
Not dangerous according to the ADR/RID, IMDG and DOT specifications.

15 Regulations

- Product related hazard informations:
The product has been classified and marked in accordance with directives on hazardous materials.
- Hazard symbols: Xi Irritant
- Risk phrases:
38 Irritating to skin.
41 Risk of serious damage to eyes.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- Safety phrases:
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
37/39 Wear suitable gloves and eye/face protection.
51 Avoid release to the environment. Refer to special instructions/safety data sheets
- National regulations
- Water hazard class:
Water hazard class 1 (Assessment by list): slightly hazardous for water.

16 Other information

Disclaimer of liability: the information in this MSDS was obtained from sources which we believe are reliable. However, the information is (Contd. on page 5)

USA

0010 7101

Sasol Servo BV



MUOSPERSE FA 192

Page: 5/5

Material Safety Data Sheet
acc. to ISO/DIS 91014

Printing date: 02/06/2003

Reviewed on: 07/15/2002

Trade name: MUOSPERSE FA 192

(Contd. of page 4)

provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product.

If the product is used as a component in another product, this MSDS information may not be applicable.

* Data compared to the previous version altered.

-----USA



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 30035 BUSINESS NAME **ADVANCED CHEMISTRY & TECHNOLOGY, INC.**

I. FACILITY INFORMATION

CHEMICAL LOCATION **Raw Material Storage**
CONFIDENTIAL LOCATION EPCRA Yes No 5 MAP # 1 6 GRID # **J5** 7

II. CHEMICAL INFORMATION

CHEMICAL NAME **ANTAROX BL-240** WASTE Yes 8 TRADE SECRET Yes No 11
* If EPCRA see instructions

COMMON NAME **ETHOXYLATED ALCOHOL** 9 An EHS Chemical Yes No 12
*If EHS is "Yes", all amounts must be LBS

CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16

PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT **2** 19 MAXIMUM DAILY AMOUNT **4** 20 ANNUAL WASTE AMOUNT **NONE** 21 STATE WASTE CODE 22

UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE **365 DAYS** 24 LARGEST CONTAINER **1 GAL CAN** 25
 c. POUNDS d. TONS
*If EHS, amount must be in pounds.

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER _____

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

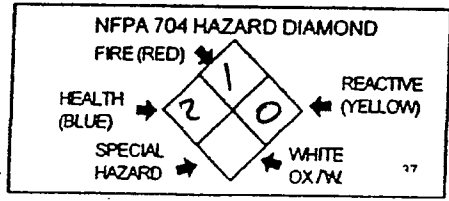
STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|-----------|---|---|---------------|
| 1 99.5 29 | ETHOXYLATED, PROPOXYLATED ALCOHOLS 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 68603-25-8 32 |
| 2 0.5 29 | WATER 30 | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 7732-18-5 32 |
| 3 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | |
| 4 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | |
| 5 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # _____ 33
Refer to shipping papers or MSDS
DOT HAZARD CLASS _____ 34
Refer to shipping papers or MSDS
EPCRA YES NO 35
X _____ 36
If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet

ANTAROX BL-240

Date Prepared: 12/27/05

Supersedes Date: 11/22/02

1. PRODUCT AND COMPANY DESCRIPTION

RHODIA INC.
RHODIA NOVECARE
CN 7500
8 Cedar Brook Drive
Cranbury NJ 08512-7500

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS (Communication and Emergency Response System) at 800-916-3232.

For Product Information:

(800) 973-7873

Chemical Name or Synonym:

ETHOXYLATED PROPOXYLATED C8-10 ALCOHOLS

Molecular Formula:

$\text{CH}_3(\text{CH}_2)_{6-8}\text{CH}_2(\text{C}_2\text{H}_4\text{O})_m(\text{C}_3\text{H}_6\text{O})_n\text{OH}$

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS Reg Number | OSHA Hazard | Percentage |
|-----------------------------------|----------------|-------------|------------|
| ETHOXYLATED PROPOXYLATED ALCOHOLS | 68603-25-8 | Y | > 99.5 |
| WATER | 7732-18-5 | N | < 0.5 |

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:

clear to hazy viscous liquid, slight odor.

Warning Statements:

WARNING!! SEVERE EYE IRRITANT.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Irritant. Can cause redness, irritation.

Acute Skin:

Low acute dermal toxicity. Slightly irritating. May cause redness, irritation.

Acute Inhalation:

Inhalation not likely. Mists may cause upper respiratory tract irritation.

Acute Ingestion:

Practically non-toxic. Can cause nausea, diarrhea, abdominal cramps.

Chronic Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

Skin Exposure:

In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

Inhalation:

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

Ingestion:

If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention. Do not leave victim unattended.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:

> 123 C (254 F). Flammability Class: WILL BURN.

Method Used:

Cleveland Open Cup

Flammability Limits (vol/vol%):

| | |
|---------------|---------------|
| Lower: | Upper: |
| No Data | No Data |

Extinguishing Media:

Recommended (small fires): dry chemical, carbon dioxide, Recommended (large fire): alcohol foam, universal foam, water spray, Not recommended: water jet (frothing possible).

Special Fire Fighting Procedures:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards:

Product will burn under fire conditions.

Hazardous Decomposition Materials (Under Fire Conditions):

oxides of carbon

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:

Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:

Absorb with an inert absorbent. Sweep up and place in an appropriate closed container (see Section 7: Handling and Storage). Clean up residual material by washing area with water. Collect washings for disposal.

Environmental and Regulatory Reporting:

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:

9 to 49 C (48 to 120 F)

Handling:

Avoid breathing vapors and mists. Avoid direct or prolonged contact with skin and eyes. Use nonsparking tools and grounded/bonded equipment and containers when transferring.

Ethylene oxide may collect in container head space. Although concentrations are expected to remain below established exposure limits, provide adequate ventilation when accessing or working with open containers and tanks.

Storage:

Store in tightly closed containers. Store in an area that is dry, well-ventilated, away from ignition sources, away from incompatible materials (see Section 10. Stability and Reactivity).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

No exposure limits were found for this product or any of its ingredients.

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

For reasonably foreseeable industrial end uses of this material, respiratory protection should not be necessary.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

clear to hazy viscous liquid.

Odor:

slight odor.

pH:

6 to 8 at 10 wt/wt%.

Specific Gravity:

0.987 at 25 C (77 F).

Water Solubility:

soluble

Melting Point Range:

Not Available

Boiling Point Range:

Not Available

Vapor Pressure:

< 0.01 mmHg at 25 C (77 F)

Vapor Density:

Not Available

Percent Volatiles by Volume:

< 0.5

10. STABILITY AND REACTIVITY

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

heat
open flame
spark

Materials/Chemicals To Be Avoided:

strong oxidizing agents
strong reducing agents

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal

oxides of carbon

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:

not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:

Toxicological Information and Interpretation:

eye - eye irritation, rabbit. Moderately irritating.

Acute Skin Irritation:

Toxicological Information and Interpretation:

skin - skin irritation, rabbit. Slightly irritating.

Acute Dermal Toxicity:

No test data found for product.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:

Toxicological Information and Interpretation:

LD50 - lethal dose 50% of test species, 2.4 ml/kg, rat.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

No additional test data found for product.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

No data found for product.

Chemical Fate Information:

Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Container Handling and Disposal:

Any containers or equipment used should be decontaminated immediately after use.

EPA Hazardous Waste - NO

14. TRANSPORTATION INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation

Shipping Name:

NOT REGULATED

15. REGULATORY INFORMATION

Inventory Status

| Inventory | Status |
|------------------------|--------|
| UNITED STATES (TSCA) | Y |
| CANADA (DSL) | Y |
| EUROPE (EINECS/ELINCS) | P |
| AUSTRALIA (AICS) | Y |
| JAPAN (MITI) | Y |
| SOUTH KOREA (KECL) | Y |

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS

Inventory Issues:

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

| | |
|-----------------------|-------|
| Fire Hazard | - NO |
| Reactive Hazard | - NO |
| Release of Pressure | - NO |
| Acute Health Hazard | - YES |
| Chronic Health Hazard | - NO |

STATE REGULATIONS:

This product contains the following components that are regulated under California Proposition 65:

| Ingredient Name | Cancer List | Reprod. List | No Sign. Risk Lvl (ug/day) | |
|-----------------|-------------|--------------|----------------------------|-----|
| | | | California | RPI |
| DIOXANE | Y | N | 30 | ND |
| ETHYLENE OXIDE | Y | Y | 2 | ND |
| PROPYLENE OXIDE | Y | N | 2 | ND |

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

| | |
|---|--------------------------------|
| 2 | Health Hazard Rating--Moderate |
| 1 | Flammability Rating--Slight |
| 0 | Instability Rating--Minimal |

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

| | |
|---|--------------------------------|
| 2 | Health Hazard Rating--Moderate |
| 1 | Flammability Rating--Slight |
| 0 | Reactivity Rating--Minimal |

Reason for Revisions:

Change and/or addition made to Section 12, Regulatory Review and Update.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
 OSHA - Occupational Safety and Health Administration
 TLV - Threshold Limit Value
 PEL - Permissible Exposure Limit
 TWA - Time Weighted Average
 STEL - Short Term Exposure Limit
 NTP - National Toxicology Program
 IARC - International Agency for Research on Cancer
 ND - Not determined
 RHODIA - Rhodia Established Exposure Limits

Disclaimer:

Page 7 of 7

The information herein is given in good faith but no warranty, expressed or implied, is made.

**** End of MSDS Document ****



HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1 Page _____ of _____ 2

FACILITY ID# 30035 38 BUSINESS NAME ADVANCED CHEMISTRY & TECHNOLOGY, INC. 3

I. FACILITY INFORMATION

CHEMICAL LOCATION 4 RAW MATERIAL STORAGE
CONFIDENTIAL LOCATION Yes No 5 MAP# 1 6 GRID# J5 7
EPCRA

II. CHEMICAL INFORMATION

CHEMICAL NAME 8 SURFYNOL 465 SURFACTANT WASTE Yes TRADE SECRET Yes No 11
COMMON NAME 9 SURFACTANT An EHS Chemical Yes No 12
CAS# 10 9014-85-1 FIRE CODE HAZARD CLASSES (supplied by GGFD) 13

TYPE (Check one item only) a. PURE b. MIXTURE c. WASTE 14 RADIOACTIVE Yes No 15 CURIES 16
PHYSICAL STATE (Check one item only) a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
 d. ACUTE HEALTH e. CHRONIC HEALTH

AVERAGE DAILY AMOUNT 19 10 MAXIMUM DAILY AMOUNT 20 5 ANNUAL WASTE AMOUNT 21 NONE STATE WASTE CODE 22
UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE 24 365 DAYS LARGEST CONTAINER 25
 c. POUNDS d. TONS
*If EHS, amount must be in pounds. 1 GAL CAN

STORAGE CONTAINER (Check all that apply) a. ABOVEGROUND TANK e. PLASTIC DRUM i. VAT m. CYLINDER q. TANK WAGON 26
 b. UNDERGROUND TANK f. NONMETALLIC DRUM j. FIBER DRUM n. GLASS CONTAINER r. RAIL CAR
 c. TANK INSIDE BLDG g. METAL CONTAINER k. BAG(S) o. PLASTIC CONTAINER s. TOTE BIN
 d. STEEL DRUM h. CARBOY l. BOX(S) p. IN MACH OR EQUIP t. OTHER

STORAGE PRESSURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT 27

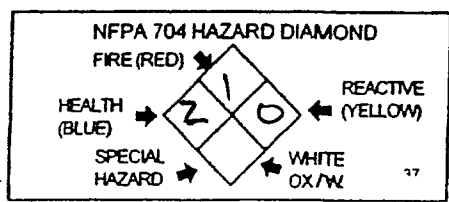
STORAGE TEMPERATURE a. AMBIENT b. ABOVE AMBIENT c. BELOW AMBIENT d. CRYOGENIC 28

| %WT | HAZARDOUS COMPONENT (For mixture or waste only) | EHS | CAS # |
|----------|---|--|-------------|
| 1 100 29 | Ethoxylated 2,7,9-trimethyl 5-decyl-1,7-diol 30 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 31 | 901485-1 32 |
| 2 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 3 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 4 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |
| 5 29 | | <input type="checkbox"/> Yes <input type="checkbox"/> No 31 | 32 |

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

PLACARDING INFORMATION

UNDOT # _____ 33 Refer to shipping papers or MSDS
DOT HAZARD CLASS _____ 34 Refer to shipping papers or MSDS
EPCRA YES NO 35
X _____ 36 If EPCRA, Please Sign Here



MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED



Material Safety Data Sheet

Version 1.14
Revision Date 11/06/2005

MSDS Number 300000004762
Print Date 09/24/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : SURFYNOL® 465 SURFACTANT
Product Use Description : Surfactant
Company : Air Products and Chemicals, Inc
7201 Hamilton Blvd.
Allentown, PA 18195-1501
Telephone : 1-800-345-3148 Chemicals
1-800-752-1597 Gases and Electronic Chemicals
Emergency telephone number : 800-523-9374 USA
01-610-481-7711 International

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS Number | Concentration (Weight) |
|--|------------|------------------------|
| Ethoxylated 2,4,7,9-tetramethyl 5 decyn-4,7-diol | 9014-85-1 | 100% |

Ethoxylated Acetylenic Diols.

3. HAZARDS IDENTIFICATION

Emergency Overview

Mild skin irritant.
Severe eye irritant.

Potential Health Effects

Inhalation : Very toxic by inhalation of spray mist and/or aerosols. Industrial chemicals such as this material with acute aerosol toxicity values as shown in Section 11 would not be classified as toxic by inhalation according to US domestic and international transport regulations.

Eye contact : Severe eye irritation.

Skin contact : Mild skin irritation.

Chronic Health Hazard : This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Component has caused the following reproductive effects in laboratory animals however, the effects are not sufficient to characterize the material as a reproductive toxin: Fertility. Subchronic exposure of this material or component in test animals has caused abnormalities in the following organ(s): Liver

Exposure Guidelines

Air Products and Chemicals, Inc

SURFYNOL® 465 SURFACTANT

Material Safety Data Sheet

Version 1.14

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MSDS Number 30000004762

Print Date 09/24/2007

Target Organs : Eyes.

Aggravated Medical Condition

Eye disease

4. FIRST AID MEASURES

- General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Eye contact : Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.
- Skin contact : Wash off immediately with plenty of water for at least 20 minutes. Wash off with soap and water. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.
- Ingestion : Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
- Inhalation : Move to fresh air.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam.
Carbon dioxide (CO₂).
Dry chemical.
Dry sand.
Limestone powder.
- Specific hazards : Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.
- Special protective equipment for fire-fighters : Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.
- Environmental precautions : Construct a dike to prevent spreading.
- Methods for cleaning up : Approach suspected leak areas with caution. Contact Air Products' Emergency Response Center for advice. Place in appropriate chemical waste container.
- Additional advice : Evacuate area and do not approach spilled product. If possible, stop flow of

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Revision Date 11/06/2005

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Print Date 09/24/2007

product.

7. HANDLING AND STORAGE

Handling

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Provide readily accessible eye wash stations and safety showers.
Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

- | | |
|---|--|
| Respiratory protection | : Not required for properly ventilated areas. |
| Hand protection | : Neoprene gloves. Nitrile rubber. The breakthrough time of the selected glove(s) must be greater than the intended use period. |
| Eye protection | : Chemical resistant goggles must be worn. |
| Skin and body protection | : Long sleeve shirts and trousers without cuffs. |
| Environmental exposure controls | : Construct a dike to prevent spreading. |
| Special instructions for protection and hygiene | : Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking or using the toilet. |

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|----------------|--|
| Color | : Light yellow. |
| Odor | : Mild. |
| Vapor pressure | : 0.14 inHg at 21 °C |
| Density | : 64.925 lb/ft ³ (1.04 g/cm ³) at 70 °F (21 °C) |

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| | |
|---------------------|-------------------|
| pH | : 7 |
| Boiling point/range | : 784 °F (418 °C) |
| Flash point | : > 110 °C |

10. STABILITY AND REACTIVITY

| | |
|----------------------------------|--|
| Stability | : Stable under normal conditions. |
| Materials to avoid | : Dehydrating Agents. Reactive metals (e.g. sodium, calcium, zinc etc.). Materials reactive with hydroxyl compounds. Oxidizing agents. |
| Hazardous decomposition products | : Heating above 65C in the presence of strong base can liberate acetylene and Methyl Isobutyl Ketone. Carbon monoxide. Carbon dioxide (CO2). Aldehydes. Flammable hydrocarbon fragments (e.g., acetylene). |

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

| | |
|-----------------------------------|--|
| Ingestion | : LD50 : 6,300 mg/kg Species : (Rat) |
| Inhalation | : LC50 (1 h) : > 2 mg/l Species : (Rat) |
| Skin. | : LD50 : > 2,000 mg/kg Species : Rabbit. Method : Estimated. |
| Eye irritation/corrosion | : Severe eye irritation. |
| Acute dermal irritation/corrosion | : Mild skin irritation. |

Chronic Health Hazard

Adult rats were orally administered this material or a component in the diet at the following concentrations 0, 500, 1000, and 2000 mg/kg/day. The offspring were then treated at the same dose levels as their parents for 91 days. Litter size at birth and mean weanling weights were decreased in the 2000 mg/kg/day group. After 91 day on test, a significant increase in liver weights with accompanying microscopic changes was observed in both sexes in the high-dose group. The oral NOEL was 1000 mg/kg/day for both the reproduction and repeated dose phases of this experiment. Rats were orally administered this material or a component in the diet for 28 days at concentrations of 0,

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Print Date 09/24/2007

750, 1500, 3000, and 6000 ppm. No adverse effects were seen at any of the dose levels. The oral No-Observed-Effect-Level (NOEL) was 6000 ppm. This material or a component was administered orally to dogs in gelatin capsules at dose levels of 0, 200, 400, and 600 mg/kg/day for 91 days. All dogs survived for the duration of this study with few clinical signs. The only adverse effect observed was an increase in liver weights at 400 and 600 mg/kg/day.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity : EC50 (72 h) : 93 mg/l
Species : *Skæletonema costatum*.

Toxicity to other organisms : No data available.

Persistence and degradability

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : Contact supplier if guidance is required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. TRANSPORT INFORMATION

CFR

not regulated

IATA

not regulated

IMDG

not regulated

CTC

not regulated

Further information
Not dangerous goods

15. REGULATORY INFORMATION

Material Safety Data Sheet

Version 1.14

Revision Date 11/06/2005

MSDS Number 300000004762

Print Date 09/24/2007

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es)
Irritant.

| Country | Regulatory list | Notification |
|-------------|-----------------|--|
| USA | TSCA | Included on Inventory. |
| EU | EINECS | Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer. |
| Canada | DSL | Included on Inventory. |
| Australia | AICS | Included on Inventory. |
| Japan | ENCS | Included on Inventory. |
| South Korea | ECL | Included on Inventory. |
| China | SEPA | Included on Inventory. |
| Philippines | PICCS | Included on Inventory. |

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification:
Acute Health Hazard

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level:
None.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

WHMIS Hazard Classification
Toxic Material Causing Other Toxic Effects

16. OTHER INFORMATION

HMIS Rating

Health : 2
Flammability : 1
Physical hazard : 0

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

For additional information, please visit our Product Stewardship web site at
<http://www.airproducts.com/productstewardship/>

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750, 1500, 3000, and 6000 ppm. No adverse effects were seen at any of the dose levels. The oral No-Observed Effect-Level (NOEL) was 6000 ppm. This material or a component was administered orally to dogs in gelatin capsules at dose levels of 0, 200, 400, and 600 mg/kg/day for 91 days. All dogs survived for the duration of this study with few clinical signs. The only adverse effect observed was an increase in liver weights at 400 and 600 mg/kg/day.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity : EC50 (72 h) : 93 mg/l
Species : *Skeletonema costatum*.

Toxicity to other organisms : No data available.

Persistence and degradability

Mobility : No data available

Bioaccumulation : No data available on the product itself.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : Contact supplier if guidance is required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. TRANSPORT INFORMATION

CFR

not regulated

IATA

not regulated

IMDG

not regulated

CTC

not regulated

Further information
Not dangerous goods

15. REGULATORY INFORMATION

Air Products and Chemicals, Inc

SURFYNOL® 465 SURFACTANT

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