

## CITY OF GARDEN GROVE OFFICE OF THE CITY CLERK

Mayor

Steven R. Jones

John R. O'Neill

**Patrick Phat Bui** 

Kim B. Nguyen

Mayor Pro Tem - District 2

Council Member - District 4

Council Member - District 6

**Stephanie Klopfenstein** Council Member - District 5

George S. Brietigam Council Member - District 1 Diedre Thu-Ha Nguyen Council Member - District 3

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.

March 29, 2021

Request # 6685 Requester: Cameron Hughes Company: Paladin Law Group

Re: 7341 Anaconda Ave.

Dear Mr. Hughes,

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

# GARDEN GROVE



# FIRE DEPARTMENT

# HAZARDOUS MATERIALS DISCLOSURE PROGRAM

## **REPORTING FORMS PACKET**

SHORT VERSION

FOR OFFICIAL USE ONLY		
FACILITY ID NO.	8891	
BUSINESS NAME	advanced Chemistry & Technology.	
BUSINESS ADDRES	55 7341 Anacenda ave	
APPROVED BY	G DATE 409	
NEW BUSINESS		
PICK 4D BU	SLIST CALARP: CUPA: GIS	
FEE		

Revised 2/2007

ADDEN GROLP		FIRE DEPARTMEN way, Garden Grove,	CA 92842		File # Fire District Inspector Next Insp	2314 FPB Shift N	
Occupant or DBA	ADVANCED CHEMIS	STRY & TECHNOLOGY	ſ	E	usiness Phone	e 714 373-28:	37
Address	7341 ANACONDA A	ve		Suite	Zip	9284	11
<b>Business Owner</b>	Jordan Company				Phon	ne	
Emergency Contact					Phon	e	
Group F-1	Load	Sprinklers F/P/N	F	5 yr. Cert.	11/08/2007	Haz Mat 🔽	
Fire Permits	· · · ·					<u></u>	
811031 HIGH-PILED FLAM. COMP. GASE	COMBUSTIBLE STOC S, 491011 HOT WOR	CK, 801031 HAZARDO	US MATERI/ / open flame,	ALS - use, h	andling or stora	ge, 741031 NON-	

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

SIGNS	ASSEMBLY OCCUPANCIES
Provide address visible from the street (CFC 505.1)	Post maximum occupancy load sign (CFC 1004.3)
Provide hazardous materials warning signs (CFC 2703.5)	Remove combustible decorative material (CFC 807.1.2)
Provide hazardous materials warning signs (CFC 2703.5) 2ND CONTAINMENT DOOR LATCH EXITS CONTAINMENT EXIT DOOR PANIC HARDWARE	Remove storage under stairway (CFC 315.2.2)
SHIPPING/RELEVING EXIT DOOR Provide/maintain approved panic hardware (CFC 1008.1.9)	ELECTRICAL SAFETY PRE-CAUTION
Remove locks, chains,bolts or bars from exit door (CFC 1008.1.8)	Discontinue use of extension cords (CFC 605.6)
Remove exit door/hardware (CFC 1008.1.8.5)	Keep 30" clear for access in front of electrical panel (CFC 605.3)
Remove exit obstruction (CFC 1028.3)	Provide/replace electricalcoversocketpower strip (CFC 605.1) •
Provide/maintain illuminated exit sign(s) (CFC 1011.2)	Location
EMERGENCY LIGHTS BY MAIN ELECTRICAL PANELS	HAZ-MAT SAFETY PRE-CAUTIONS
ACCESS Provide outside Knox Box (CFC 506.1)	Complete Hazardous Materials Disclosure packet 714-741-5636 (CFC 2701.5.1)
Remove obstructions to fire apparatus access (CFC 503.4)	Provide approved cabinet if more than 10 gal. flammable liquids (CFC 3404.3.4.3)
FIRE PROTECTION EQUIP. AND SYS.	Provide approved safety containers(s) for flammable
Provideextinguishers2A10BC40BCK (CFC 906.1)	Liquids (CFC 3404.3.1)
Service and tag extinguisher(s) (CFC 901.6)	MISCELLANEOUS
Hang extinguisher(s) 3.5'-5' from floor (Title 19, Sec.567.6)	Lower storage18" below sprinklers or2' from ceiling (CFC 315.2.1) MANTANENCE ROOM SECURE GAS CYLINDER PROPANE CYLINDERS NEAR CONTAINMENT
Clean filters, ducts , hood above cooking surface (CFC 904.11.6.4)	Secure compressed gas cylinders (CFC 3003.5.3) SECURE 55 gl. DEVINS TO PALETS
Service auto-extinguishing system semi-annually (CFC 904.11.6.3)	Post Business License Fire Department Permit (CFC 105.6)
5 yr certification on sprinkler/standpipe system (Title 19, Sect. 904)	
ADDITIONAL VIOLATIONS AND/OR NOTES	
FIRE DOOR ANNUAL TEST OK 8/3 - P	LUG HOLE IN CONTAINMENT ROOM
•	
	· · ·
Business representative signatureSite	Date 8/3/10
Inspector ID # TRAVIS MELLEN \$ # 286	57 Date 8/3/10
Cleared <u>AV / &amp; / &amp;</u> Mailback card due/ /	
	inspection date 8/17/10 Final Notice / / /

FORM 1

CITY OF GARDEN	GROVE FIRE DEPARTMENT

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

Hazardous Materials Business Information Form

	Page <u> </u> of <u> </u> 3
BUSINESS INFORMATION	
FACILITY #     3     0     0     3     5       (Supplied by GGFD)     3     0     0     3     5	1 ENDING DATE 2
BUSINESS NAME Advanced Chemistry & Technology, Inc. (ACTEC	4 BUSINESS PHONE 5 H) 714 373 2837
BUSINESS SITE ADDRESS 7341 ANACONDA ANE	6
CITY GARDEN GROVE 7	CA ZIP 9 CA 92841
DUN & BRADSTREET 10 SIC CODE (4 DIGIT	L
	13
BUSINESS OPERATOR NAME 14	OPERATOR'S PHONE 15
BUSINESS OWNER	
owner NAME The Jordon Conpany	16 OWNER PHONE 17 Z12 572 0800
OWNER MAILING ADDRESS 767 5th Ave 48th Floor	18
CITY NEW YORK	STATE 20 ZIP 21 NY 10153
ENVIRONMENTAL CONTACT	
	22 <u>CONTACT PHONE</u> 23 24 24
CITY 25	STATE 26 ZIP 27
PRIMARY EMERGENCY CONTACTS	CA SECONDARY
NAME 28 NAME	33
TITLE V.P. Operations 29 TITLE VP.	MFG 34
BUSINESS PHONE 714 373 2837 × 156 30 BUSINESS PHONE 714 37	13 2837 x 131 35
24-HR. PH 31 24-HR. PHONE	36
PAGER # 32 PAGER #	37
ADDITIONAL LOCALLY COLLECTED INFORM	ATION
Describe the type of Business Operation: Aircraft Sealent Manufacturer	38 TOTAL # OF EMPLOYEES 39
BILLING ADDRESS (IF DIFFERENT FROM ABOVE)	40 ATTENTION 41
PROPERTY OWNER NAME 42 ADDRESS	te Morice PHONE 310 828 7547
Certification: Based on my inquiry of those individuals responsible for obtaining the infor have personally examined and am familiar with the information submitted and believe the info	
ENTATIVE	45 DATE 4 29 09 46
	49
VP MFLF VP MFLF	<b>5</b> 0
Business Info Form 1 – 03/06/03	· · · · · · · · · · · · · · · · · · ·

	JPA	FACILITY INFORMATION
(714) 741-5636 BUSINESS	ACTIVITIES	S
		Page_1 of
	DENTIFICATION	
FACIENTY ID#	EPA ID # (Hazardo	ous Waste Only) 2 2000   69 5   6
BUSINESS NAME (Same as FACILITY NAME or DBA-Doing Busines	s As)	3
	IES DECLARATION	
NOTE: If you check please submit the Business	YES to any par Owner/Operato	or Identification page.
Does your facility	If Yes, ple	ease complete these pages of the UPCF
A. HAZARDOUS MATERIALS Have on site (for any purpose) bazardous materials at or above 55		
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?		4. ✓ HAZARDOUS MATERIALS INVENTORY - CHEMICAL DESCRIPTION (Form 3)
B. UNDERGROUND STORAGE TANKS (USTs)	1	
1. Own or operate underground storage tanks?	YES X NO	5. VUST FACILITY (Formerly SWRCB Form A)
2. Intent to upgrade existing or install new USTs?		<ul> <li>✓ UST TANK (one page per tank) (Formerly Form B)</li> <li>✓ UST FACILITY</li> </ul>
		✓ UST INSTALLATION - CERTIFICATE OF
		COMPLIANCE (one page per tank) (Formerly
3. Need to report closing a UST?	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:		
<ul> <li>- any tank capacity is greater than 660 gallons, or</li> <li>- the total aggregate capacity for the entire facility (ASTs, drums and</li> </ul>	YES X NO	8. V NO FORM REQUIRED TO CUPAS
portable containers) greater than 1,320 gallons?		· · · · · · · · · · · · · · · · · · ·
D. HAZARDOUS WASTE	N	
<ol> <li>Generate hazardous waste?</li> <li>Recycle more than 100 kg/month of excluded or exempted recyclable</li> </ol>		9. ✓ EPA ID NUMBER - provide at the top of this page 10. ✓ RECYCLABLE MATERIALS REPORT
materials (per HSC §25143.2)?		IV. V RECYCLABLE MATERIALS REPORT (one per recycler)
3 Treat hospitale wests		
3. Treat hazardous waste on site?	TES X NO	11. ✓ ONSITE HAZARDOUS WASTE TREATMENT - FACILITY
ł	<b>I</b>	TREATMENT - FACILITY (Formerly DTSC Forms 1772)
		(Formeny UTSC Forms 1772) ✓ ONSITE HAZARDOUS WASTE
	1	TREATMENT - UNIT (one page per unit)
		(Formerly DTSC Forms 1772A,B,C,D and L)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Condition Authorization)?	YES K NO	12. CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)
5. Consolidate hazardous waste generated at a remove site?	YES 🕅 NO	13. <b>A REMOTE WASTE/CONSOLIDATION SITE</b> ANNUAL NOTIFICATION (Formerly DTSC
<ol> <li>Need to report the closure/removal of a tank that was classified</li> </ol>		Form 1196)
waste and cleaned onsite?		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	YES 🕅 NO 1	15. ✓ REGULATED SUBSTANCE REPORTING FORM (Orange County CUPA)
<ul> <li>Stationary Source with more than a Threshold Quantity of a Regulated Substance in a Process</li> </ul>		

## 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 Managuris 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.

Signatu	
Name:	
Title:	VP Manutacturing
Date:	
	•

## 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 Facility	Tenants change often - unknow	Phone Phone	()
To the South Facility Facility	Catalina Cylinders	Phone Phone	(714) 890-0999. ( )
To the East Facility Facility	Tenents change often. Untrain	Phone Phone	( )
To the West Facility Facility	Pacific Polymers	Phone Phone	(714) 898-0025 ()

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

## **OPTIONAL NOTIFICATIONS:**

1.	Hazardous Waste Contractor Name: <u>UNIVAR</u>	(323) 837-7022
2.	Insurance Company Name: <u>Lockton</u>	(86) 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.
•	7341 ANACONDA Ave. Garden Grove.
Date of Evacuation Dr	ill: September 18,2008
Brief Description of Dr	ill: <u>Simulation of emergency</u> , sounded alorm
by pasing syster	n, evacuate building, accounted for everyone.
Facilitator's Name:	Stephane Pyrck
Facilitator's Title:	VP. MFG
	I hereby certify, under penalty of perjury, that I facilitated the evacuation drill as described above. Signature of Facilitator: $\underbrace{Jiphom E. Rut}_{Date Signed:}$
Date of Evacuation Dri	11:
Brief Description of Dri	II:
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 schatolier
Employee Title:	Receiving Operator.
Training Provided:	HAZWOPER REFRESHER
	Date Completed: Feb 2009
Employee Name:	All ACTECH Manufacturing & Packaging.
Employee Title:	
Training Provided:	49 CFR - Hozardous Matural Traini
	Date Completed: APRIL 2009
Employee Name:	
Employee Title:	
Training Provided:	
-	
	· · · · ·
	Date Completed:
Employee Name:	
Employee Title:	
Training Provided:	
J	
· · · · · · · · · · · · · · · · · · ·	
a a a a a a a a a a a a a a a a a a a	Date Completed:

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

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## **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: Monstacturing Area EAST Portion of Building Evacuation route: EAST EXIT TO STACHING AREA. Emergency exits: EAST & North SIDES OF BUILDING Staging area: EAST PARKING LOT 2. Working area: OFFICE & LAB - EAST Portion of Bulling Evacuation route: South exit then east to staging area Emergency exits: SOUTH & ELST SIDES of building. Staging area: EAST PARKING LOT 3. Working area: \_\_\_\_ Packaging - West Portion of Building Evacuation route: West exit then cest to staging crea 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 cast to staging area. Emergency exits: <u>South side of building</u> Staging area: 5. Working area: Evacuation route: Emergency exits: Staging area:

## MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.

## **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:

EMERGENCY FUNCTION(S): Response to Scene, directs, reports with Public a. <u>Creorge Bargers</u> b. <u>Steven Rivere</u> c. Jon Zook	JOB TITLE:	Emergency Coordina	tor
b. Steven Rivera	EMERGENCY FUNCTION(S):	Response to Scene direct	s. reports with Rublin
	a. Crearge Barger	emeircancy response units (	Evre, police, etc)
c. Jon Zook	b. Steven River	۲ <b>د</b> .	
	c. Jon Zook		
d	d		

JOB TITLE: First Ressonder EMERGENCY FUNCTION(S): 157 Person Reporting to Scene. Kon Cassayre a. 🗌 phone Ryrek b.\_\_\_\_ c. Chris Schechter d. 

JOB TITLE: lean Lead EMERGENCY FUNCTION(S): Tokes rolls accounts to replayees, reported to missing to Energy coordinator. a. Sec Tom Coughling Ь. c. Ron Cassayre. d.

MAKE ADDITIONAL COPIES OF THIS FORM AS NEEDED.

## **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.

Trainin de en 544taza-dous ماحج Operators and Emergeney 2000 Kesponde <u>---</u> 29 CFR 1910.120 8 Ce CCR 5192 (e) 19 .

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 Gárden Grove, CA 92840 Bus. (714) 741-5600 Fax (714) 741-5640 Hazardous Materials Coordinator (714) 741-5636 Address: 734/ ANACONDA Occupant or DBA: ADVANCED CHEMISTRY STRY STRACTION Owner/Manager: Geochee E BARCAZA
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)
<ul> <li>Complete Hazardous Materials Disclosure packet, HSC Chapter 6.95, Title 19 Div 2 Chapter 3, CFC 8001.3.2</li> <li>Failure to submit a Business Emergency Plan. [HSC 25505(a)(1)]; CFC 8001.3.2</li> <li>Failure to review and/or revise the Business Emergency Plan as required [HSC 25505(b)&amp;(c)]</li> <li>Chemical inventory is incomplete and/or requires update. [HSC 25509]</li> </ul>
<ul> <li>The Emergency Response Plan is inadequate and/or does not address the following issues and shall be immediately revised and resubmitted: [HSC 25504(b)&amp;(c)]</li> <li>Notification Procedures</li> <li>Mitigation Procedures</li> </ul>
<ul> <li>Evacuation Procedures</li> <li>Employee Training</li> <li>Business Owner/Operator page is incomplete or needs to be updated. [HSC 25509]</li> </ul>
<ul> <li>Failure to provide name, title, and 24-hour number of emergency contact(s). [HSC 25509(a)(7)]</li> <li>Site Map is incomplete or insufficient. [HSC 25509]</li> <li>Failure to report a release or threatened release. [HSC 25507]</li> </ul>
<ul> <li>Failure to report a change in business or chemical inventory within 30 days of the following event(s): [HSC 25510]</li> <li>100% or more increase in the quantity of a disclosed material</li> <li>Addition of a previously undisclosed material</li> <li>Change in business address</li> </ul>
<ul> <li>Change in business ownership</li> <li>Change of business name</li> <li>Other (See comments below):</li> </ul>
Violation(s): California Fire Code 2001, Articles 79 & 80, Title 19 Part 9, California Code of Regulations (CCR)
<ul> <li>Provide for secondary containment for hazardous materials liquids and solids (CFC 8003.1.3.3)</li> <li>Provide spill control for hazardous materials liquids (CFC 8003.1.3.2)</li> <li>Provide approved cabinet if more than 10 gallons of flammable liquids (CFC 7902.5)</li> </ul>
Provide placarding and signs (NFPA 704, CFC Article 79 §7901.9, Article 80 §8001.7-8) No-Violations Found
Additional Violations and/or Notes:
NFAA 704 PLACARD FOR RCRA STORAGE AREA IN KAAR OF
BuilDiNG.
Responsible Party: Re-inspection Date: MAI 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: Castan and while K ID# 4212
Condition Upon Re-inspection: Date: 4-9-09
<u>COM/1ES 5/6/09 (G)</u> F5-4308.doc (05/06)

		· )					?
		ROVE FIRE DEP/ a Parkway, Garde		CA 92842		File # 3 Fire District 2 Inspector F Next Insp 5	314 PB Shift N
Occupant or DBA	ADVANCED C	HEMISTRY & TEC	HNOLOGY		E	Business Phone	714 373-2837
Address	7341 ANACO				Suite	Zip	92841
Business Owner	Josef Beierl	GEORGE 1	BANAZI	4	626-94	5 1336Phone	848 761-3764
Emergency Contact	RON CASSAY	ÎRE				Phone	562 212-6060
Group H2	Load	Sprinkler	s F/P/N	F	5 yr. Cert.	11/08/2007	Haz Mat 🔽
741031 NON-FLAM. ( MATERIALS - use, ha An inspection at the SIGNS	anoming of storag	ge, 811031 HIGH-P	ILED COME	BUSTIBLE	STOCK, ing violatio		RDOUS
Provide address vi	sible from the str	eet (CFC 505.1)				ccupancy load sign	(CFC 1004.3)
	materials warnir	ng signs (CFC 2703.5)	)	Re	move combus	tible decorative mate	erial (CFC 807.1.2)
EXITS						under stairway (CF0	
		rdware (CFC 1008.1.9	•			FETY PRE-CAU	
Remove exit door/h     Location	nardware (CFC 1	008.1.8.5)	008.1.8) ***	Kee (Ci	ep 30" clear fo FC 605.3)	of extension cords (( r access in front of e	electrical panel
Remove exit obstru		•	4 731	(CF	C 605.1)	ectrical cover s	ocketpower strip
		n(s) (CFC 1011.2)   ž		ాజప్ Loo	ation		
ACCESS	in approved eme	rgency lighting (CFC	1006.1)			Y PRE-CAUTIO	
Provide outside Kno					nplete Hazardo	ous Materials Disclo	sure packet
		s access (CFC 503.4)	)	- ada	resses	abinet if more than 3.4.3)	n 10 gal. flammable
FIRE PROTECTION	shers2A10BC	40BCK (CFC 9		MUU		afety containers(s) 5.1)	for flammable
	•	· (Title 19, Sec.567.6)				" below sprinklers	or 2' from ceiling
Clean filters, ducts , I	hood above cook	ing surface (CFC 904	.11.6.4)	Seci	ure compresse	d gas cylinders (CF	C 3003.5.3)
Service auto-extingui	ishing system ser	mi-annually (CFC 904	.11.6.3)	Post	Business L	icenseFire Depa	rtment Permit
5 yr certification on s			ct. 904)	·	C 105.6)		
ADDITIONAL VIOLA					VIOLATION		
- Jan Star	<u>Constant</u> Sa	Winnels - Fa.	19 Al	<u>- 728</u>	T FUSE	hBLE Lirja	FIRE REGIN
		1	<u>7 - 1</u>				
Business representative sig		they W	lits			Date3//	0/09
	tor ID #	2867				Date_ <u>_3/1</u> 6	109
@ Cleared 3,27,157	_ 🗌 Mailback	card due/ /	🕢 Re-	inspection of	late <u>3 124</u> 1/	Final Not	ice/ /

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HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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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

<u>.</u>}.

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 fore 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 halogensDECOMPOSITION 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) Iclo: 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

 TETRATOGENIC 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 liq	uids, N.O.S.
HAZARD CLASS (CFR):	3	
ADDITIONAL HAZARD CLASS	(CFR):	NA
PACKING GROUP (CFR):	111	
UN ID NUMBER (CFR):	UN# 1993	
SHIPPING NAME (IATA):	Flammable li	quid, N.O.S.
HAZARD CLASS (IATA):	3	
ADDITIONAL HAZARD CLASS	(IATA):	NA
PACKING GROUP (IATA):	111	
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

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## 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-131 Part B

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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

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME Zirconium n-Propoxide n-Propanol 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

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

CAS #	App
23519-77-9	
71-23-8	
Proprietary	

Approximate % (w/w) >65 >25 Balance

## SIN # 834-100



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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

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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 <sup>3</sup>
n-Propanol	200	ppm.
ACGIH - STEL		
Zirconium n-Propoxide (as Zirconium)	5	mg/m <sup>3</sup>
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
рН	N/A	VOC Material	318
Specific Gravity	1.05	% Non - Vol(w/w)	30
Vapor Density	2.1 (n-Propanol)		

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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 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 La Hazard Cli		ld Number UN199 ting Group II	3	

#### **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

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

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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

-	· **
	CARDEN GROL

1

## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

CEPARIT		·····	$\mathbf{k}$								
			REVISED 1					Page -	of		- 2
FACILITY ID# 3	0 0 3 5		38 BUS	INESS NAME DVANC	ED C	HEMIST	RY	TECHN	00044	1, IN	10.3
					RMATION						
CHEMICAL LOCATIO	Mate	ricla	Storage	An	20						4
CONFIDENTIAL LOCA	ATION	🗋 Yes	No 5 MAP	#	1		6 GRID#	(+)	-67		7
			II. CHEMI	CAL INFO	RMATION						
CHEMICAL NAME	AC-130	) Part	B		WASTE	Yes	TRADE S		<b>X</b> Yes	□ №	11
COMMON NAME		SAME					An EHS (	CRA see ins	Iructions	1 No	12
CAS #	1		ZARD CLASSES (suppli	ed by GGFD)			*If EHS is	"Yes", all am	ounts must be L	1 .	
7/25				·							13
TYPE (Check one liem only	L a. PORE		C. WASTE		ADIOACTIVE		KNO 1	5 CURIES	3		16
PHYSICAL STATE (Chect one liter only)	a. Solid	DE LIQUID	□ c. GAS <sup>17</sup>	FED HAZA CATEGORI	ES	FIRE 🔲 I	. REACTIVE	-	RESSURE RELI HRONIC HEALT		18
AVERAGE DAILY	5 19	MAXIMUM DAILY AMOUNT	50 <sup>2</sup>	20 ANNUAL	WASTE AMOU	NT	21 STA	TE WASTE (			22
	ONS D. CUE		DAYS ON SITE				RGEST CONT	AINER			25
Ar c. POUN Ar EHS, amo	VDS d. TON unt must be in pounds.	IS	36	5 DA	YS		5	Gal	Pail	<b>I</b> .	
STORAGE CONTAINER (Check all that apply)			PLASTIC DRUM     NONMETALLIC DRU     METAL CONTAINER     h. CARBOY		BER DRUM	🔲 o PLAS	INDER SS CONTAINE TIC CONTAIN ACH OR EQU		q. TANK WAGO r. RAIL CAR s. TOTE BIN 1. OTHER	ON	26
STORAGE PRESSURE		AMBIENT	b. ABOVE	AMBIENT		BELOW AMB	ENT				27
STORAGE TEMPERATU		AMBIENT	b. ABOVE			BELOW AMBI	ENT	d. CRY	OGENIC		28
%WT			DNENT (For mixtur		only)		EHS		CAS	#	
1 73-77 29			PROPOX	IDE	30	🗆 Yes	🗆 No	31 27	3519-7	7-9	32
2 23-2729	n-PR	OPANOL	-		30	🖸 Yes	No No	31 -	11-23-	- 8	32
3 balance	TRAD	E SEC.	re7		30	🛛 Yes	🗆 No	31	N.A.		32
4 29					30	🛛 Yes	🗆 No	31			32
5 29					30	🗋 Yes		31			32
H more hazardous compone	nts are present at greater	then 1% by weight if a	ion-carcinogenic, or 0.1%	by weight if ca	rcinogenic, attac	h additional she	ets of paper ca	pturing the re	quired information	on.	
			PLACARDING	SINFORM	IATION						
UNDOT #		1993		33	Г		704 HAZ	RD DIAM	IOND	ך	
		ping papers or	MSDS				RED) X4		REACTIVE		
DOT HAZARD CLA		2		34		HEALTH (BLUE)	• <z×< td=""><td>())+</td><td>(YELLOW)</td><td> </td><td></td></z×<>	())+	(YELLOW)		
		o shipping pape	ers or MSDS			SPEC HAZAI	<u> </u>				
-	<u> </u>			35						J	
x	IF FPCRA P	lease Sign He		36		E AS MAN					
		icase sign He			11	VENTOR	FORM	S NEED	ED		

Revised 2/02 -- haz-inven2.doc



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CAS #

71-23-8 Proprietary

23519-77-9

## **1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

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 SIN # 834-100

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

Approximate % (w/w)

73 – 77 23 – 27

Balance

#### ChemTrec Emergency

1 - 800 - 424 - 9300

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
Zirconium n-Propoxide
n-Propanol
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 <sup>3</sup>
n-Propanol	200	ppm.
ACGIH - STEL		
Zirconium n-Propoxide (as Zirconium)	5	mg/m <sup>3</sup>
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)		

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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 L Hazard C		l Number UN1993 ng Group II	3	

#### **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
Ν	- Pressure
Ν	- 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

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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	CAS #	Approximate % (w/w)
Zirconium n-Propanol	23519-77-9	73 – 77
n-Propanol	71-23-8	23 - 27
Non - hazardous and other ingredients below reportable levels	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

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## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

DEPART		4				
	ADD DELETE	REVISED 1			Page	of 2
FACILITY ID# 3	0 0 3 5	38 BUSINES ADV	ANCED CI	HEMISTRY .	TECHNOLOG	4. TAIC 3
			INFORMATION			1/2.021
CHEMICAL LOCATION	Row M	ATERIAL	Storage			4
CONFIDENTIAL LOCAT	TION Yes	X No 5 MAP #	1	6 GRI	· J5	7
		II. CHEMICA	LINFORMATION		<u> </u>	
	FORMULA AL	- 190 PROC	F		DE SECRET	Ø~~ 11
COMMON NAME	DENATUR	28N AIC	OHOL		If EPCRA see instructions HS Chemical Yes	□ No 12
CAS#		AZARD CLASSES (supplied by		•¥ EH	IS is "Yes", all amounts must b	eLBS
	T	·	·····			13
TYPE (Check one tem only)	a. PURE		14 RADIOACTIVE	Yes No	15 CURIES	16
PHYSICAL STATE (Check one Item only)		C GAS 17	ATEGORIES	IRE D. REACT	NE 🗌 a. PRESSURE R	1
		200 20	ANNUAL WASTE AMOUN		STATE WASTE CODE	ALTH 22
UNITS . GALLO		3 DAYS ON SITE	NONE	24 LARGEST C	ONTAINER	- 25
C. POUNE "If EHS, amour	DS  d. TONS nt must be in pounds.	365	DAYS		5 GAL PA	
STORAGE CONTAINER (Check all that apply)	b. UNDERGROUND TANK		☐ i. VAT ☐ I. FIBER DRUM ☐ I. BAG(S) ☐ I. BOX(S)	m Cylinder	TAINER 🔲 S. TOTE BIN	a
STORAGE PRESSURE	AMBIENT	b. ABOVE AME		BELOW AMBIENT		27
STORAGE TEMPERATUR	E AMBIENT	b. ABOVE AME		BELOW AMBIENT	d. CRYOGENIC	28
%WT	HAZARDOUS COMP	PONENT (For mixture or	waste only)	EHS	CA	\S #
1 85.8 29	Ethano)		30	🗆 Yes 🗌 No	31 64-1	7-5 32
2 4.3 29	Methanol		30	🗆 Yes 🔲 No	31 67-9	56-1 32
3 0.9 29	Methyl Isc	botyl Ker	tone 30	🗌 Yes 🗌 No	31 108-10	
1 9.D 29	ISOPROPYL	ALCOHOL	30	🗋 Yes 🗌 No	31 67-63	3-0 32
5 29	·····		30	Yes No	31	32
If more hezerdous component	is are present at greater than 1% by weight	H non-carcinogenic, or 0.1% by w	eight if carcinogenic, attacl	hadditional sheets of pape	ar capturing the required inform	vetion.
· · · · · · · · · · · · · · · · · · ·		PLACARDING IN	FORMATION			
UNDOT #	UN 1987	33			AZARD DIAMOND	<b>¬</b>
	Refer to shipping papers of	or MSDS		FIRE (RED)		
DOT HAZARD CLAS		34				
EPCRA 🗆 YES	Refer to shipping pa □ NO	pers or MSDS		SPECIAL HAZARD	WHITE OX/W 37	
x						
~	If EPCRA, Please Sign H	lere 36		AS MANY COP	IES OF CHEMICAL M AS NEEDED	

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An ISO 9001:2000 Certified Company

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

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 nonpoisonous. 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

MSDS 066A1Revision 2.1 (Revision Date 12/05, DH Govt, Form A-1/ Page 1 of 2 ( 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 is 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-,15%. 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 noncombustible matter and transfer to containers; use nonsparking tools to collect absorbed material. Refer to section 11 for disposal information.

SECTION VIEHANDLING 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

Oly Inumber, 1987

IMO Information: Alcohols, NOS

Label of Class: 3 Packing Group II

racking Oloup 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

Superfund Amendn	nents and Reauthoriz:	ation Act of 1986 (SARA) Tit
Acetaldehyde	75-07-0	.0010
Methanol	67-56-1	4.29
Ketone		
Methyl Isobutyl	108-10-1	0.9

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 111 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%

lsopropanol (CAS 67-63-0) upper bound cone. 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, annonium carbonate, 1,1,1 tri-chloroethane, methylene chloride, (FC-23), (CFC-13), (CFC-12), (CFC-11), (CFC-22), (CFC-114) and (CFC-115).

VOC 790g/i: vapor pressure 43.6 mm Hg /a/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. ROEN GROL

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## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

FACILITY ID# 30 035 BUSINESS NAME ADVANCED CHEMISTRY & TECHNOLOGY, INC. I. FACILITY INFORMATION CHEMICAL LOCATION CONFIDENTIAL LOCATION CONFIDENTIAL LOCATION TYPE STORAGE		DEP	ART	-		H									
Image: Second	-			_] ADD							Pag	e of		_ 2	
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Revised 2/02 -- haz-inven2.doc

## 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-1GALL, A962F-1GALL, 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 imme diately.

**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 sytem 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 selfcontained 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 fireexposed 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 alcoholresistant 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/m3 TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m3 TWA
Methyl alcohol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA

	200 ppm TWA; 400 ppm STEL	400 ppm TWA; 980 mg/m3 TWA 2000 ppm IDLH	400 ppm TWA; 980 mg/m3 TWA
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**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 288.2 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 = 12800Carcinogenicity: 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 fetoxicity 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° 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

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	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

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## 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.

AND EN GROT	HAZARDOUS MATERI	ALS INVER	NTORY FO	FORM 3
			Page	of 2
FACILITY ID# 3 0 0 3 5	38 BUSINESS NAME ADVANCE	CHEMIST	RY TEC	HNOLOGY, INC.
	I. FACILITY INFORM			
CHEMICAL LOCATION	STORAGE AREA			4
	Yes X No 5 MAP # 1		6 GRID # /	1->67 '
	II. CHEMICAL INFORM	ATION		
CHEMICAL NAME Poly Sulfide S	Declant W	ASTE 🗍 Yes	8 TRADE SECRET	Yes XNo 11
AC-736 CV	as A Beso.		9 An EHS Chemica	
CAS # 10 FIR	E CODE HAZARD CLASSES (supplied by GGFD)		'II EHS IS "Yes", 4	all amounts must be LBS 13
TYPE (Check one Kern only)	MIXTURE C. WASTE 14 RADIO		No 15 CI	JRIES 16
PHYSICAL STATE (Crieck one Ham only)	LIQUID C. GAS 17 FED HAZARD CATEGORIES		b. REACTIVE	c. PRESSURE RELEASE 18 •. CHRONIC HEALTH
	IM DAILY 20 ANNUAL WAS		21 STATE WA	
	23 DAYS ON SITE	100 24 L	ARGEST CONTAINER	25
I EHS, amount must be in pounds.	365 DAY	5	50	Gollon Drum
STORAGE CONTAINER . ABOVEGROUND (Check eff that apply) . b. UNDERGROUND . c. TANK INSIDE BLD . d. STEEL DRUM	TANK Q I. NONMETALLIC DRUM II. FIBEF	S) 🗌 o PLA	LINDER ASS CONTAINER ISTIC CONTAINER MACH OR EQUIP	q. TANK WAGON 26     r. RAIL CAR     s. TOTE BIN     t. OTHER
STORAGE PRESSURE	NT D. ABOVE AMBIENT	🔲 a BELOW AM	BIENT	27
		C BELOW AM		CRYOGENIC 28
	COMPONENT (For mixture or waste only)		EHS	CAS #
$\frac{1}{20-25^{29}}$ Colcium	Laboncte	30 🗍 Yes	□ No 31	A7-1-3A-1 32
10-co IDDENE	·	30 🗌 Yes 30 🗍 Yes	□ No 31	08-88-3 2
10-15 CIMESTO	na Topanol		□ No 31	317-65-3 32
5 29 litenium	Dioxide		□ No 31	13463-67-732
If more hazardous components are present at greater than 1%	by weight if non-carcinogenic, or 0.1% by weight if carcine		No 31	32 the regulaed information.
	PLACARDING INFORMAT			
	apers or MSDS ATA/AGER) 3.3 EMD ping papers or MSDS	Fire Health (BLUE) SPE		DIAMOND REACTIVE (YELLOW) MHITE DX/WL 17
EPCRA 🗆 YES 🗋 NO	35	<b>L</b>	·····	
X If EPCRA, Please	Sign Here 36		NY COPIES OF RY FORM AS N	

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Revised 2/02 -- haz-inven2.doc

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#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

For information, contact: Advanced Chemistry & Technology 7341 Anaconda Avenue Garden Grove, CA 92841-2921 714 - 373 - 2837 SIN #834-100

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). Ma 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

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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

Explosive Limits: Autoignition:

Method: Setaflash Closed Cup Flash Point: 41°F (5°C) LEL (%) Not Determined UEL (%) Not Determined 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 die 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



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#### 7. HANDLING AND STORAGE

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away form 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 <sup>3</sup> Total dust
	Toluene	50	Ppm – skin
	Calcium carbonate	10	mg/M <sup>3</sup> Total dust
	Titanium Dioxide	10	mg/M <sup>3</sup>
OSHA - PEL			
	Limestone	5	mg/M <sup>3</sup> Resp. dust
	Toluene	100	ppm
	Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
	Titanium Dioxide	10	mg/M <sup>3</sup>
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
рН	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.



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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 Dermal LD50 Inhalation LC50

Rat Rabbit Mouse 5,000 mg/kg 12,124 mg/kg 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/M<sup>3</sup> 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



Y

Y

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Resin solution

DOT Label: Flammable Liquid Hazard Class: 3 (IATA/49CFR) 3.3 (IMO) kaging Group: II UN/NA Id Num: UN 1866 USPS Mailability No

Y

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

- 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.		



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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. Highl



Highly flammable.

# Contains: 601-021-00-3

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

GARDEN GROUT

17

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

EPARTE											
	ADD	DELETE		1				Page	of		_ 2
FACILITY ID# 3	0 0 3 5		38 BI	USINESS NAME	ED CI	HEMISTE	フレ デ ブ	ECHA	01064	. 7.	3
				ILITY INFO					50097	,1~	/ <u> </u>
CHEMICAL LOCATION			~1								4
	Mater	ial ?	storage	Ar	્રેન						
CONFIDENTIAL LOCA	TION	Yes	No 5 M	AP#	١	6	GRID#	G2-	(+7		. 7
			II. CHEN	MICAL INF	ORMATION		1	40			
		0 4	DAGE		WASTE	Yes 8	TRADE SI	CRET	Yes		11
	G215 C	lans A	DAZZ		<u> </u>			CRA see inst			
COMMON NAME		S	AME			9			Yes	K) No	12
CAS#		10 FIRE CODE HA	ZARD CLASSES (sup	pplied by GGFD)	<del></del> <u>_</u> _		TTEHS is	Yes", all amo	ounts must be LE	85	13
TYPE (Check one kern only)	a. PURE		C was	TE 14	RADIOACTIVE	Yes A	No 15	CURIES			
PHYSICAL STATE		D. LIQUID		17 FED HAZ							16
(Check one kem only)			L] C. UAS	CATEGO					RESSURE RELE		18
AVERAGE DAILY	10	MAXIMUM DAILY	150		L WASTE AMOU					<u>н</u>	22
	>.2	AMOUNT	150 DAYS ON SITE		5			· · · · ·		<u> </u>	
C. POUN				65 DA	445	24 LAF			Drui	$\sim$	25
STORAGE CONTAINER	·		] e. PLASTIC DRUM	·	VAT	 суці					26
(Check all that apply)		SROUND TANK	] f. NONMETALLIC [ 9. METAL CONTAI	=	FIBER DRUM BAG(S)		SS CONTAINE	R 🗍	r. RAIL CAR	514	
			h. CARBOY		BOX(S)		ACH OR EQUI	=	s. Tote Bin I. Other		
STORAGE PRESSURE		AMBIENT	D 6. ABC	OVE AMBIENT		BELOW AMBI	ENT			B	27
STORAGE TEMPERATUR		AMBIENT		OVE AMBIENT		BELOW AMBI	ENT	d. CRY	OGENIC		28
%WT	HAZAR	RDOUS COMP	ONENT (For mi	xture or waste	only)		EHS		CAS	#	
1 20-25 29	Calciur	n Carbo	onate		30	🛛 Yes	No No	31 2	471-34	1-1	32
2 5-10 29	Tolue	ne			30	🗆 Yes	D No	31 /	08-88	-3	32
3 1-5 29	Titan	Um DI	oxide		30	🗆 Yes	🗆 No		463-6		32
4 1-5 29	Terph	enyl, h	ydroge.	nated	30	□ Yes	□ No		788-3		32
5 balance		ade Seci			30	□ Yes		31		<u>Å</u>	32
If more hazardous componer	nts are present at great	er than 1% by weight i	non-carcinogenic, or	0.1% by weight if	carcinogenic, atta				quired informet		-
			PLACARD	ING INFOR	MATION						
UNDOT #	UI	V1866		33	Г	NFP/	704 HAZ/				
		pping papers o	r MSDS					X			
DOT HAZARD CLA	SS	3		34		HEALTH	<\`X	∕∂\+	REACTIVE (YELLOW)		
		to shipping pa	pers or MSDS			(BLUE) SPEC		WHIT	Έ		
EPCRA 🛛 YES				35	·[	HAZAI	≈0 🕶 ∨	OXA		]	
~						-					
X	If EPCRA.	Please Sign H	ere	36		E AS MAN					
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Revised 2/02 -- haz-inven2.doc



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

HAZARD RATINGS

Health

Fire

Reactivity

HMIS

1\*

3

0

SIN #834-100

NFPA

1

3

0

\* = Chronic

#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

### 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



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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: Setaflash 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



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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 <sup>3</sup> Total dust
Titanium Dioxide	10	mg/M <sup>3</sup>
Toluene	50	ppm.
Terphenyl, hydrogenated	0.5	ppm - Ceiling
OSHA - PEL		
Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
Titanium Dioxide	10	mg/M <sup>3</sup>
Toluene	100	ppm
Terphenyl, hydrogenated	0.5	ррт
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.



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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).

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:	
🛫 I 🤄 E des services de la companya de la company	

l erphenyl, hydrogenated: Oral LD50	Rat Mouse	17,500 12,500	mg/kg mg/kg
Dermal LD50 Terphenyl:	Rabbit	> 2,000	mg/kg
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.



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MSDS No: 32151-04 Effective: 01/26/09 Supercedes: 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 Resin solution DOT Label: Flammable Liquid 3 (IATA/49CFR) 3.3 (IMO) Hazard Class: Packaging Group: II

49 CFR IATA IMO Y Y UN/NA Id Number: UN 1866 USPS Mailability No

Υ

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).



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

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

Class B Division 2

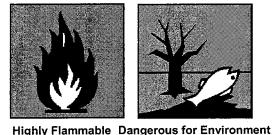
CEPA - NPRI - Toluene

### European Union: Preparation classification:

Xn

N





F



Harmful Contains:

601-021-00-3 TOLUENE

#### Particular hazards associated with the preparation and safety recommendations:

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

### **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

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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				NAME						2
3	0 0 3 5		ADVA	ANCED		TRY 5	TEC	HNOLOG	r,IN	10.3
CHEMICAL LOCATION	-		I. FACILITY	INFORMATI	ON					
	Closs	IRO	om							4
CONFIDENTIAL LOCA	TION [	Yes XNo	5 MAP #	}		6 GRIC		J2		7
		1	I. CHEMICAL	INFORMAT	ION					
CHEMICAL NAME AC	-145 Adhesi	ion Pros	noter	WASTE	🗍 Yes		E SECRE		□ №	11
COMMON NAME	SAN	12				9 An EH	IS Chemica		No.	12
CAS #	10 FIRE	E CODE HAZARD CL	ASSES (supplied by (	GGFD)		I *reh	S is "Yes",	all amounts must be	L8S	13
TYPE (Check one item only)		MIXTURE	] c. WASTE	14 RADIOACT	VE 🗍 Yes	R No	15 C	URIES	<u> </u>	16
PHYSICAL STATE (Check one New Only)				TEGORIES	_	D. REACTI				18
AVERAGE DAILY		M DAILY		ANNUAL WASTE	TO. ACUTE HEA				.TH	
UNITS GALL					24					22
ZKc. POUN				DAYS	24	LARGEST CO		Gellor	15	25
STORAGE CONTAINER (Check all that apply)	ABOVEGROUND T		TIC DRUM			CYLINDER		q. TANK WA		26
		=	L CONTAINER	I. BAG(S)	X. F	GLASS CONT PLASTIC CONT IN MACH OR E	AINER	r. RAIL CAR		
STORAGE PRESSURE	AMBIEN									27
STORAGE TEMPERATUR	E AMBIEN	T		ENT				CRYOGENIC		28
%WT	HAZARDOUS	COMPONENT	For mixture or	waste only)		EHS		CAS	S #	
1 20-2528	METHYL ET	HYL KE	TONE		30 🗌 Yes	🗆 No	31	78-93-	· 3	32
2 5-10 29	METALLIC	ESTER		*****	30 🗌 Yes	No	31	Trade S		32
3 1-5 29	ISOPROPY	L ALLO	HOL		30 🗌 Yes	🗆 No	31	67-63		32
1 balance29	TRADE S.	ECRET			30 🗌 Yes	No	31	Trade	Secret	32
5 60-65 29	WATER				30 🖸 Yes		31	7732-18	-5:	32
If more hezerdous compone	nts are present at greater than 1% .		CARDING IN			i sheets of pape	er capturim	y the required informa	ition.	
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	<del>ر</del>	apers or MSUS	Ď		HEALT		3	REACTIVE		
DOT HAZARD CLA		oing papers or	34 MSDS		(BLUE)	, - 4	×0	> 🖛 (YELLOW)		
EPCRA 🖸 YES			35			AZARD		OX/WL <sup>17</sup>		
x										
	If EPCRA, Please	Sign Here	36			ORY FOR		CHEMICAL		

Revised 2/02 -- haz-inven2.doc



1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-145 Adhesion promoter

# Material Safety Data Sheet AC-<sup>®</sup>145 Adhesion Promoter

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

SIN #834-100

Generic Description: Titanium Chelate Product Use: Adhesion promoter	HAZA		
For information, contact: Advanced Chemistry & Technology		HMIS	NFPA
7341 Anaconda Avenue	Health	2*	2
Garden Grove, CA 92841-2921 714 - 373 - 2837	Fire	3	3
ChemTrec Emergency	Reactivity	0	0
1 - 800 - 424 - 9300		* = Chroni	
2. COMPOSITION/INFORMATION ON INGREDIENTS			
COMMON NAME	CAS #	Approxima	ate % (w/w)
Methyl ethyl ketone	78 - 93 - 3 20 - 25		- 25
Metallic esters	Proprietary	prietary 5-10	
Isopropyl Alcohol	67 - 63 - 0	67 - 63 - 0 1 – 5	
Non - hazardous and other ingredients below reportable levels	Proprietary	Proprietary Balance	
Water	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



MSDS No: 11450-06 Effective: 01/26/09 Supercedes: 08/02/04 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......:
 23F
 - 5C
 Method:.....
 Setaflash Closed Cup

 Explosive Lmts.....:
 LEL(%)Not Determined UEL(%)Not Determined
 Setaflash Closed Cup

 Autoignition........
 Not Determined
 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
рН	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:

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 - hc	ours

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

. . . .

:			
50	Rat	5,045	mg/kg
	Dog	4,797	mg/kg
	Mouse	3,600	mg/kg
LD50	Rabbit	12,800	mg/kg
on LC50	Rat	12,000	ppm/8 - Hours
	: 50 LD50 on LC50	Dog Mouse LD50 Rabbit	50     Rat     5,045       Dog     4,797       Mouse     3,600       LD50     Rabbit     12,800

#### **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 Resin solution		49 CFR Y	IATA Y	IMO Y
DOT Label	: Flammable Liquid	UN/NA ld Num	.: UN 1866		



MSDS No: 11450-06 Effective: 01/26/09 Supercedes: 08/02/04 Page: 5 of 6

USPS Mailability ..: No

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

CEPA - NPRI Methyl ethyl ketone Isopropyl alcohol Class D Division 2 Sub - division B



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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 Cunden GROUM

# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

OEPARTN			
ADD DELETE	REVISED 1	Page	e of 2
FACILITY ID# 3 0 0 3 5	38 BUSINESS NAME ADVANCED C	HEMISTRY & TEC	HNOLOGY, INC.
	I. FACILITY INFORMATION		4172.02
CLASS I	form		4
CONFIDENTIAL LOCATION	No 5 MAP#	5 GRID#	7 IZ '
	II. CHEMICAL INFORMATION		
CHEMICAL NAME	WASTE	Yes 8 TRADE SECRE	T Xes No 11
COMMON NAME	sion from :		see instructions
Same	-		ali amounts must be LBS
CAS # 10 FIRE CODE HA	ZARD CLASSES (supplied by GGFD)		13
	C. WASTE 14 RADIOACTIVE	Yes X 15 (	CURIES 16
PHYSICAL STATE a. SOLID D. LIQUID	C. GAS 17 FED HAZARD CATEGORIES		a PRESSURE RELEASE 18
and the second states	and a second		CHRONIC HEALTH
AVERAGE DAILY AMOUNT D. 19 MAXIMUM DAILY AMOUNT	20 ANNUAL WASTE AMO	UNT 21 STATE W	ASTE CODE 22
UNITS a. GALLONS b. CUBIC FEET 23	DAYS ON SITE 365 DAYS	24 LARGEST CONTAINER	
	. PLASTIC DRUM		q. TANK WAGON 26
	1. NONMETALLIC DRUM     1. FIBER DRUM       0. METAL CONTAINER     1. BAG(S)	n. GLASS CONTAINER	r. RAIL CAR
	h. CARBOY	P. IN MACH OR EQUIP	
STORAGE PRESSURE			27
	ONENT (For mixture or waste only)		CAS #
1 70-90 20 ETHANOL	30		64-17-5 32
2 5-15-29 TITANATE	ESTER 30	☐ Yes ☐ No 31	Trade Secret 32
3 1-5 29 METHANOL	30	🗍 Yes 🗌 No 31	67-56-1 32
11-5 29 ISOPROPYLI	ALCOHOL 30	☐ Yes ☐ No 31	67-63-0 32
5 balances TRADE SECR	•	☐ Yes ☐ No 31	N·A. 32
If more hezerdous components are present at greater than 1% by weight i		tech additional sheets of paper capturin	g the required information.
	PLACARDING INFORMATION		
UNDOT # UN 1170	33	NFPA 704 HAZARD	DIAMOND
Refer to shipping papers o	r MSDS	FIRE (RED)	REACTIVE
DOT HAZARD CLASS	34	(BLUE) + 2	
	Ders of MSDS	SPECIAL HAZARD	OX/W <sup>17</sup>
	35		1
X If EPCRA, Please Sign H	MA	KE AS MANY COPIES OF	
" EFURA, Please Sign H	ere 36	INVENTORY FORM AS I	NEEDED

Revised 2/02 -- haz-inven2.doc



**1. CHEMICAL PRODUCT AND COMPANY INFORMATION** 

# Material Safety Data Sheet AC-<sup>®</sup> 137 Red, Adhesion Promoter

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

Proprietary

Balance

SIN #834-100

#### Product ID: AC-137 Red Adhesion promoter Generic Description: Titanate mixture Product Use: Adhesion promoter HAZARD RATINGS For information, contact: HMIS NFPA Advanced Chemistry & Technology 7341 Anaconda Avenue Health 2\* 2 Garden Grove, CA 92841-2921 3 Fire 3 714 - 373 - 2837 Reactivity 0 0 ChemTrec Emergency \* = Chronic 1 - 800 - 424 - 9300 2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME CAS # Approximate % (w/w) Ethanol 70 - 90 64 - 17 - 5Titanate ester Proprietary 5 - 15 Methyl Alcohol 67 - 56 - 1 1 - 5 67 - 63 - 0 Isopropyl Alcohol 1 - 5

# Non - hazardous and other ingredients below reportable levels 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



31

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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.



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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 Methyl Alcohol Isopropyl Alcohol ACGIH - STEL	1000 200 400	ppm ppm ppm
Ethanol	1000	ppm
Methyl Alcohol	200	ppm
Isopropyl Alcohol	400	ppm
OSHA - PEL Ethanol Methyl Alcohol Isopropyl Alcohol OSHA - STEL	1000 200 400	ppm ppm ppm
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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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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



IMO

Y

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

IAYA

Y

USPS Mailability ..: No

UN/NA Id Num ....: UN 1170

49 CFR

Y

#### **14. TRANSPORT INFORMATION**

Weight (lb.)	Shipping Name
	ETHANOL SOLUTIONS

DOT Label..... Flammable Liquid Hazard Class........ 3 (IATA/49CFR) 3.2 (IMO) 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) ir	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 -			
R	leagent Alcohol	64 17 - 5	70 - 90
Ν	lethyl Alcohoi	67 – 56 - 1	1 - 5
le	opropyl Alcohol	67 <b>-</b> 63 <b>-</b> 0	1 - 5

CONEG - No data available.



Material Safety Data Sheet AC-<sup>®</sup> 137 Red, Adhesion Promoter

MSDS No: 11370-03 Effective: 01/26/09 Supercedes: 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

GARDEN GROUP

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

	50 4		Dana (	
	·		Page of	2
30,035	ADVANCED C		TECHNOLOGY	', INC. <sup>3</sup>
CHEMICAL LOCATION	ACILITY INFORMATION			
MATERIAL STORAGE	AREA			4
CONFIDENTIAL LOCATION Yes X No 5	MAP #	6 GRIÐ	· GZ -> G7	L 7
II. C	HEMICAL INFORMATION	V		
CHEMICAL NAME Polysulfide Sectort	WASTE		E SECRET Yes	Ø № 11
COMMON NAME	2		EPCRA see instructions S Chemical Yes	No 12
CAS# 10 FIRE CODE HAZARD CLASSE	S (supplied by GGED)	•# EHS	is "Yes", all amounts must be LE	35
				13
TYPE (Check one tem and) a. PURE b. MIXTURE c.	WASTE 14 RADIOACTIVE	Yes No	15 CURIES -	16
PHYSICAL STATE a. SOLID X b. LIQUID C. GAS	17 FED HAZARD a.	FIRE D. REACTIV		ASE 18
	Z.	ACUTE HEALTH	E. CHRONIC HEALT	н
AMOUNT 5 AMOUNT 200	20 ANNUAL WASTE AMOU	15 <sup>21</sup> S	TATE WASTE CODE	22
UNITS . GALLONS . b. CUBIC FEET 23 DAYS ON S C. POUNDS . d. TONS	365 DAYS	24 LARGEST CO		25
			50 Gallon (	
(Check all that apply)		m CYLINDER     n. GLASS CONTAI		DN 26
a TANK INSIDE BLDG	NTAINER I. BAG(S)	PLASTIC CONTA		
		C. BELOW AMBIENT		27
		BELOW AMBIENT	d. CRYOGENIC	28
%WT HAZARDOUS COMPONENT (For	mixture or waste only)	EHS	CAS	#
125-3020 Ioluene	30	🗆 Yes 🔲 No	31 108-88.	3 32
2 10-15 29 Calcium carbonate	30	🗆 Yes 🗌 No	31 471-34-	32 32
3/1-5 29 Zinc Salt	30	🗆 Yes 🛄 No	31 Deperiet	Cat 32
4 29	30	🗆 Yes 🔲 No	31	32
5 29	30	🗆 Yes 🔲 No	31	32
If more hezardous components are present at greater than 1% by weight if non-carcinogenk	, or 0.1% by weight if carcinogenic, atta	t ch additional sheets of paper	cepturing the required informatio	n.
PLACA	RDING INFORMATION			
UNDOT # UN 1866	33	NFPA 704 HA	ZARD DIAMOND	]
Refer to shipping papers or MSDS		FIRE (RED)	3 REACTIVE	
DOT HAZARD CLASS 3 (IATA (CARAG) 32 (I	TNO)+			
Refer to shipping papers or MSD	S		WHITE 17	
EPCRA YES NO	35		OX/W "	
x	MAK	E AS MANY COPIE		
If EPCRA, Please Sign Here		NVENTORY FORM		

Revised 2/02 -- haz-inven2.doc



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

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: AC-<sup>®</sup> 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 HAZARD RATINGSHMISNFPAHealth2\*2Fire33Reactivity00\* = Chronic\*

ChemTrec Emergency 1 - 800 - 424 - 9300

# 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

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SIN #834-100



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) LEL(%)Not Established Explosive Lmts: Autoignition....: Not Established

Method.....: Setaflash Closed Cup 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. 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



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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 <sup>3</sup> Total dust
Toluene	50	Ppm (skin)
OSHA - PEL		_
Calcium carbonate	5	mg/M <sup>3</sup> 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 glovers 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: Physical State:	5	Odor: Solubility:	Mercaptan 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.



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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 ignitagility.

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 Resin solution		49 CFR Y	IATA Y	IMO Y
	Flammable Liquid 3 (IATA/49CFR) 3.2 (IMO) II	UN/NA ld Num: USPS Mailability:			

For a two compartment container that contains parts A and B. See above information.



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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 – 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. prmaldehyde 50 - 00 - 0 < 0.01\*

Formaldehyde 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



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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

HAZAR

# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD		SED 1		Page of	2
FACILITY ID# 3 0 0 3	5	ADVANCED C	HEMISTRY &	TECHNOLOGY,-	INC.3
	l.	FACILITY INFORMATION			
CHEMICAL LOCATION	LIAL STORAGE	e Area			4
CONFIDENTIAL LOCATION EPCRA	□ Yes X No 5	MAP# 1	6 GRID#	62-767	7
	ii. d	HEMICAL INFORMATION		$G_{2} \rightarrow G_{+}$	·
CHEMICAL NAME POLYSULF	de Seclant	WASTE			No 11
COMMON NAME	Close C I	2000	9 An EHS	Chemical 🗌 Yes 💢	No 12
CAS #	10 FIRE CODE HAZARD CLASSE	S (supplied by GGFD)	•11 EHS is	s "Yes", all amounts must be LBS	13
TYPE (Check one item only)		WASTE 14 RADIOACTIVE	Yes No	15 CURIES	16
PHYSICAL STATE a. SOLID	b. LIQUID 🗆 c. GAS	17 FED HAZARD A.	FIRE D. REACTIVE	C. PRESSURE RELEASE	18
	19 MAXIMUM DAILY	20 ANNUAL WASTE AMOL	ACUTE HEALTH	CHRONIC HEALTH	
AMOUNT 100	AMOUNT 5,000			ATE WASTE CODE	22
	CUBIC FEET 23 DAYS ON S TONS	365 DAYS	24 LARGEST CON	50 Gallon Dr	25
STORAGE CONTAINER	VEGROUND TANK		m CYLINDER n. GLASS CONTAIN o PLASTIC CONTAIN p. IN MACH OR EQU	I q. TANK WAGON ER I r. RAIL CAR VER I s. TOTE BIN	26
	. AMBIENT				27
	2		BELOW AMBIENT	d. CRYOGENIC	28
	ARDOUS COMPONENT (Fo		EHS	CAS #	
	om corbonate			31 471-34-1	32
1 - 1000	ne l	30	Yes No	31 108-88-3	32
$\frac{1}{1}$	Compound	30	Yes No	" Proprieter	1 32
5 29		30	☐ Yes ☐ No	31	32
If more hazardous components are present at gr	reater than 1% by weight if non-carcinogeni	30 c, or 0.1% by weight if carcinogenic, atta		31	32
	PLACA	RDING INFORMATION	en escuenta sineta or paper ca	puring the required information.	
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HAZARD RATINGS

HMIS

1\*

3

0

MSDS No: 37303-07 Effective: 01/27/09 Supercedes: 09/20/04 Page: 1 of 6

Health

Fire

Reactivity

# 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

# 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:

	ACGIH	IARC	NTP	OSHA
Calcium carbonate	No	No	No	No
Toluene	No	No	No	No
Zinc compound	No	No	No	No

SIN #834-100

NFPA

1

3

0

\* = Chronic



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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: Explosive Lmts:	67°F (19.4°C) LEL(%)	Not Established		Setaflash Closed Cup Not Established	
Autoianition:	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



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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 <sup>3</sup> Total dust
Toluene	50	ppm
Zinc compound	10	mg/M <sup>3</sup> Total dust
OSHA - PEL		
Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
Toluene	100	ppm
Zinc compound	10	mg/M <sup>3</sup> 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 glovers 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: Physical State:	•	Odor: Solubility:	Mercaptan 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.



MSDS No: 37303-07 Effective: 01/27/09 Supercedes: 09/20/04 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:

Toluopo

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

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 ignitagility.

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 Resin solution		49 CFR Y	IATA Y	IMO Y
	Flammable Liquid 3 (IATA/49CFR) 3.2 (IMO) II	UN/NA Id Number: USPS Mailability:			

For a two-compartment container that contains parts A and B. See above information.



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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	474 04 4	40 00
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

CEPA - NPRI

Toluene Zinc compound Zinc compounds



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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
	Page of 2
FACILITY ID# 3 0 0 3 5 38 BUSINESS NAME ADVANCED C	HEMISTRY & TECHNOLOGY, INC.
I. FACILITY INFORMATION	
CHEMICAL LOCATION	4
CONFIDENTIAL LOCATION UYes XNO 5 MAPH	6 GRID# / 7 -> / 1 7
II. CHEMICAL INFORMATION	
	Yes 8 TRADE SECRET Yes No 11
COMMON NAME	* If EPCRA see instructions
AC-635 (1035 A Base	An EHS Chemical Yes X No 12 "If EHS is "Yes", all amounts must be LBS
CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD)	13
TYPE (Chick one lem only	Yes No 15 CURIES 16
PHYSICAL STATE . SOLID X b. LIQUID . c. GAS 17 FED HAZARD CATEGORIES	FIRE <b>b</b> REACTIVE <b>c</b> PRESSURE RELEASE 18 ACUTE HEALTH <b>c</b> CHRONIC HEALTH
AVERAGE DAILY Z 19 MAXIMUM DAILY 500 20 ANNUAL WASTE AMOUNT	
UNITS . GALLONS . b. CUBIC FEET 23 DAYS ON SITE C. POUNDS . d. TONS . 365 DAYS "If ENS, amount must be in pounds	24 LARGEST CONTAINER 25
STORAGE CONTAINER	Image: Cylinder       Image: Cylinder       Image: Cylinder       25         Image: Image: Cylinder       Image: Cylinder       1       26         Image: Image: Cylinder       Image: Cylinder       26       26         Image: Image: Cylinder       Image: Cylinder       27       26         Image: Image: Cylinder       Image: Cylinder       27       26         Image: Image: Cylinder       Image: Cylinder       27       27         Image: Cylinder       27       27       27         Image: Cylinder       27       27       27
	a BELOW AMBIENT 27
	c. BELOW AMBIENT d. CRYOGENIC 28
	EHS CAS#
1520 Calcium Carbonate	□Yes □NO 31 471-34-1 32
1 DE TOWERE	□ Yes □ No 31 108-88-5 32
11-5 29 GL 1- Ci 1	□ Yes □ No 31 3765-19-0 32
s in trantium (hromete	□ Yes □ No 31 7789 - 06-2 32
30 If more hezerdous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, atta	Sch additional sheets of paper capturing the regularit information
PLACARDING INFORMATION	ana metani.
UNDOT # UN 1866 Refer to shipping papers or MSDS DOT HAZARD CLASS <u>3(IDTA/CFEAG) 3.3(IMS</u> Refer to shipping papers or MSDS	NFPA 704 HAZARD DIAMOND FIRE (RED) HEALTH (BLUE) SPECIAL HAZARD WHITE OX/WL 37
EPCRA I YES I NO 35	
	E AS MANY COPIES OF CHEMICAL NVENTORY FORM AS NEEDED

Revised 2/02 -- haz-inven2.doc

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Health

Fire

Reactivity

HAZARD RATINGS

HMIS

2\*

3

0

SIN #834-100

NFPA

2

3

0

# Product ID: AC-635 Class A Base

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

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#### 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

\* = Chronic

#### 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.

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# Material Safety Data Sheet AC-<sup>®</sup>635 Class A Base

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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 reuse.

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 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. 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** 

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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 <sup>3</sup> Total dust
Toluene	50	ppm – Skin
Calcium chromate		mg/M <sup>3</sup>
Strontium chromate	0.5	ug/M <sup>3</sup>
OSHA - PEL		0
Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
Toluene	100	ppm
Calcium chromate	0.1	mg/M <sup>3</sup> -Ceiling
Strontium chromate	0.1	mg/M <sup>3</sup> 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:

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).

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 product has the strontium chromate fully encapsulated, so dusts are not anticipated.

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. Possible skin and respiratory sensitizer. The calcium chromate is fully encapsulated so there is no dust.

#### **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: (I) 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
< 294	Resin solution Flammable	Y	Y	Y
>= 295	RQ Resin solution (calcium chromate, strontium chromate)	Y	Y	Y
	el Flammable Liquid lass 3 (IATA/49CFR) 3.3 (IMO)	UN/NA Id N USPS Mai		

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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 INFOR5IATION**

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) Propriet	tary 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:







Toxic Contains: 601-021-00-3 TOLUENE Highly Flammable Dangerous for Environment

### 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. 0THER 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.

DISCCAIMER 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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# Material Safety Data Sheet AC-<sup>®</sup>635 Class A Base

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END OF MATERIAL SAFETY DATA SHEET

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# 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

# 2. COMPOSITION/INFOMRATION ON INGREDIENTS

COMMON NAME Limestone Toluene Strontium chromate Non-hazardous and other ingredients below reportable levels

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

UAZADD DATINCO

CAS#	Approximate % (w/w)
1317 – 65 – 3	25 – 35
108 – 88 – 3	10 – 20
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 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.

SARGING BERRONT I.
Limestone

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





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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 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. 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	RQ = 1000 LB
Strontium chromate	RQ = 10 LB



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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 <sup>3</sup> Total dust
Toluene	50	ppm - Skin
Strontium chromate	0.5	ug/M <sup>3</sup>
Aromatic carboxylic ester	5	Mg/M <sup>3</sup>
OSHA - PEL		-
Limestone	5	mg/M <sup>3</sup> Resp. dust
Toluene	100	ppm
Strontium chromate	0.1	mg/M <sup>3</sup> - Ceiling
	Chromium (VI) insoluble cpds., as Cr	• •
Aromatic carboxylic ester	5	Mg/M <sup>3</sup>
OSHA - STEL		Ū.
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./gai)
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.



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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.

Toluene:

Juche.			
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	of the liver a	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
	: Flammable Liquid : 3 (IATA/49CFR) 3.3 (IMO) : III	UN/NA ld Num. USPS Mailability		

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

25 - 35

10 - 20

1 - 5

1 - 5

Balance

108 - 88 - 3 25 - 35

Proprietary

Proprietary

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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 1317 - 65 - 3 Limestone Toluene 108 - 88 - 3Environmental Hazard. Strontium chromate 7789 - 06 - 2 Aromatic carboxylic ester Non-hazardous trade secret ingredient(s) 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

Reproductive Hazard.		
Strontium chromate	7789 – 06 – 2	10 – 20
Cancer Hazard.		
Quartz (crystalline silica)	14808 - 60 - 7	< 0.01*
Cancer Hazard.		
* 7		

\* 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 Strontium chromate

Chromium compounds



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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

CARDEN GAOL

# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

DEPART	~ ~					
		REVISED 1			Page of	2
FACILITY ID# 3 0 0 3	5			ISTRY & T	ECHNOLOGY	, INC. <sup>3</sup>
CHEMICAL LOCATION		I. FACILITY INFOR	MATION			
	EIAL STORA	GE AREA				4
CONFIDENTIAL LOCATION		5 MAP# 1		6 GRID#	(+Z -> (+7	7
EPCRA		I. CHEMICAL INFO	RMATION		32 747	-
	· · · · · · · · · · · · · · · · · · ·		WASTE Yes	8 TRADE SE		No 11
Polysult	ide Sector	+		• If EPC	RA see instructions	×
COMMON NAME AC-34	n Chas A	Race		9 An EHS Ch	emical 🔲 Yes	No 12
CAS#	10 FIRE CODE HAZARD CL	ASSES (supplied by GGFD)		*# EHS is **	(es", all amounts must be LE	15 13
TYPE (Check one item only)		C. WASTE 14 RA		15 No 15	CURIES	16
		CAS 17 FED HAZAR				
(Check one New only)	~ -	CATEGORIE				
	19 MAXIMUM DAILY		WASTE AMOUNT	21 STAT	E WASTE CODE	22
		ON SITE	24			25
If EHS, amount must be in po	kunds.	365 DA	15	5	O Gallon	Drum
(Check ell that epply)		METALLIC DRUM I. F.		M CYLINDER D. GLASS CONTAINER D PLASTIC CONTAINE D. IN MACH OR EQUIP	R S. TOTE BIN	)N 26
STORAGE PRESSURE		b. ABOVE AMBIENT	🗌 a BELOV	V AMBIENT		27
STORAGE TEMPERATURE	AMBIENT	b. ABOVE AMBIENT	C BELOV	VAMBIENT		28
WT HA	ZARDOUS COMPONENT	[ (For mixture or waste o	nly)	EHS	CAS	#
1 10-15 23 Calci	ium Carbona	ste	30 🗆 Ye	es 🗌 No 3	1 471-34	~1 32
2 10-1529 TON	bene		30 🗆 Ye	es 🗍 No 3	1 108-88	-3 32
3 5-10 29 Tito	nium dioxin	de	30 🖸 Ye	s 🗌 No 3		-7 32
4 29			30 🗌 Ye	s 🗌 No 3		32
5 29			30 🗌 Ye			32
If more hezerdous components are present a				nal sheets of paper cap	uring the required informatio	ил.
	PL/	ACARDING INFORM	ATION			
UNDOT # UN	1866	33		NFPA 704 HAZAI	RD DIAMOND	ן ר
Refer to	shipping papers or MSDS	3		FIRE (RED)		
DOT HAZARD CLASS 3	EATTA/CFRA 3.3	<u>5 (I1403)</u>	HEA (BLU	ਸ਼ਸ਼ ᆃ∕ノӁ	O + (VELLOW)	
	efer to shipping papers or	MSDS				
EPCRA VES NO		35	L			
x	·	-	MAKE AS	MANY COPIES	OF CHEMICAL	
If EPCI	RA, Please Sign Here	36		TORY FORM A		

Revised 2/02 -- haz-inven2.doc



HAZARD RATINGS

HMIS

1

3

0

\* = Chronic

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Health

Fire

Reactivity

#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME CAS# Approximate % (w/w) Calcium carbonate 471-34-1 10 – 15 108-88-3 Toluene 10 - 155 – 10 Titanium dioxide 13463-67-7 Non-hazardous and other ingredients below reportable levels 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

SIN #834-100

NFPA

1

3

0



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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**

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 <sup>3</sup>
Toluene	50	ppm - Skin
Calcium carbonate	10	mg/M <sup>3</sup> Total dust
OSHA - PEL		-
Titanium Dioxide	10	mg/M <sup>3</sup>
Toluene	100	ppm
Calcium carbonate	5	mg/M <sup>3</sup> 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: Physical State: pH	Liquid	Odor: Solubility: Vapor Pressure:	
Vapor Density VOC Material %Non-Vol(w/w)	Heavier than air 150 g/l (1.26 lbs/gal)	Evaporation Rate: Specific Gravity:	Not Established

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. 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/M<sup>3</sup> 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).

-		
To	uene:	
10		

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

#### **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-® 360 Class A Base

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#### 14. TRANSPORT INFORMATION

Veight (lb.)	Shipping Name Resin solution		49 CFR Y	IATA Y	IMO Y
	Flammable Liquid 3 (IATA/49CFR) 3.3 (IMO)	UN/NA Id Num: Packing Group.:			

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:

W

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 <b>-</b> 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.



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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.

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

THE DEPARTMENT							
	DELETE	REVISED 1			Pag	e of	2
FACILITY ID# 3 0	0 3 5	38 BUSINESS NAM	CGD CH	EMISTR	TEC	HNOLOGY	, INC. 3
		I. FACILITY INF					
	TERIAL (-	RAGE ARE	~^				4
CONFIDENTIAL LOCATION	TERIAL STO	KAGE ARE	<u>A</u>	6	GRID# /	2.2/M	7
EPCRA		II. CHEMICAL IN	ORMATION		G	2 -> 67	
				Yes 8	TRADE SECRE	T Ves	No 11
COMMON NAME	ultide Secle	ent	<u> </u>	. 9		see instructions	
AC-3	<u>50 (bos (</u>	<u>Bose</u>			An EHS Chemic	ali amounts must be LB	X No 12
CAS#	10 FIRE CODE HAZ	ARD CLASSES (supplied by GGFE	))				13
TYPE (Check one Kem only)	a. PURE D. MIXTURE	C. WASTE 14	RADIOACTIVE	□ Yes 🕺	No 15 (	URIES	16
PHYSICAL STATE Check one kern only	a. SOLID X b. LIQUID	C GAS 17 FED HA				] a PRESSURE RELE	ASE 18
				CUTE HEALTH	T	. CHRONIC HEALTH	1
AMOUNT 00	AMOUNT	500	IAL WASTE AMOUN		1 STATE W	ASTE CODE	22
UNITS a. GALLONS C. POUNDS If EHS, amount must	b. CUBIC FEET 23	DAYS ON SITE 365 D	AYS	24 LARG		Gallon (	25
			I. VAT				
(Check eff that apply)	🗋 a. TANK INSIDE BLDG 🛛 🖉	9. METAL CONTAINER	I. FIBER DRUM I. BAG(S)	n. GLASS		r. RAIL CAR	
STORAGE PRESSURE	d STEEL DRUM		I. BOX(S)		I OR EQUIP	I. OTHER	
STORAGE TEMPERATURE		b. ABOVE AMBIENT		BELOW AMBIENT			27
%WT	HAZARDOUS COMPO			E		CAS #	
1 15-20 29 (0	licium carbo		30	Yes [	No 31	471-24	32
2 1-5 29 10	olvene		30	C Yes C	No 31	108-88	-2 32
3 29			30	🛛 Yes 🗖	No 31	00-00	32
4 29		· · · · · · · · · · · · · · · · · · ·	30	🗆 Yes 🛛	No 31		32
5 29	· · ·		30		No 31		32
H more hazardous components are p	present at greater than 1% by weight if n			additional sheets	el paper capturin	the required information	n.
		PLACARDING INFOR	RMATION				
	N 1866 efer to shipping papers or i	33				DIAMOND	1
	aler to snipping papers or i	MSDS		FIRE (RE	3	REACTIVE	
DOT HAZARD CLASS	SCIATH/CH249 Refer to shipping pape	) <u>3.30MD</u>		(BLUE) 🏞 🕻	$\sqrt{2}$		
		35		SPECIAL HAZARD		WHITE OX/W 17	
X	EPCRA, Please Sign Hei	ле 36		AS MANY (			
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FORM 3

Revised 2/02 -- haz-inven2.doc



MSDS No: 33503-07 Effective: 01/26/09 Supercedes: 07/27/05 Page: 1 of 5

# 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME Calcium carbonate Toluene Non-hazardous and other ingredients below reportable levels

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

CAS #	Approximate % (w/w)
471 <b>-</b> 34-1	15 – 20
108-88-3	1 – 5
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 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

SIN #834-100



Material Safety Data Sheet AC-® 350 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 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(%)

 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.



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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.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV Toluene Calcium carbonate OSHA - PEL	50 10	ppm - Skin mg/M³ Total dust
Toluene Calcium carbonate OSHA - STEL	100 5	ppm mg/M <sup>3</sup> Resp. dust
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

mg/kg

mg/kg

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# **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
Dermal LD50	Rabbit		12,124
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.)	ping Name n solution	49 CFR Y	ΙΑΤΑ Υ	IMO Y
	Flammable Liquid 3 (IATA/49CFR) 3.3 (IMO)	UN/NA Id Num: USPS Mailability		

Packaging 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:

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

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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 c	pmponent(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).
STATE RIGHT-TO-	NOW:

108-88-3	1 – 5
471-34-1	15 - 20
Proprietary	Balance
	471-34-1

#### 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 MAT	ERIALS INVENTORY FORM
ADD DELETE REVISED 1	Page of 2
FACILITY ID# 3 0 0 3 5 3 BUSINESS NAM	CED CHEMISTRY & TECHNOLOGY, INC.
I. FACILITY INF	
CHEMICAL LOCATION MATERIAL STORAGE ARE	*
CONFIDENTIAL LOCATION	1 6 GRIDO GZ -> G7 7
II. CHEMICAL INF	FORMATION
Polysulfide Seclart	WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME	9 An EHS Chemical Yes No 12
CAS # 10 FIRE CODE HAZARO CLASSES (supplied by GGFC	off EHS is "Yes", all amounts must be LBS 13
TYPE (Chieck cover from only) . a. PURE . MIXTURE . c. WASTE 14	RADIOACTIVE Yes No 15 CURIES 16
PHYSICAL STATE SOLID A. LIQUID GAS 17 FED HA	
and the second	
AMOUNT DO AMOUNT 1,500	JAL WASTE MOUNT 21 STATE WASTE CODE 22
UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE C. POUNDS d. TONS 365 D "If EHS, amount must be in pounds,	AYS 24 LARGEST CONTAINER 25 50 Gallon Drum
STORAGE CONTAINER	I. VAT     Im CYLINDER     Im CYLIND
STORAGE PRESSURE	a BELOW AMBIENT 27
	C BELOW AMBIENT d. CRYOGENIC 28
%WT HAZARDOUS COMPONENT (For mixture or was)	te only) EHS CAS #
10-1520 Calcium Carbonate	30 Yes No 31 471-34-1 32
$\frac{2}{5-10}$ $\frac{29}{10}$ 10/uene	30 ☐ Yes ☐ No 31 108-88-3 32
3/1-5 20 Methyl Ethyl Ketone	30 [] Yes [] No 31 78-93-3 32
1 15 <sup>29</sup> litenium dioxide	30 Yes No 31 13463-67-732
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight i	30         Yes         No         31         32           If carcinogenic, attach additional checks of page and page
PLACARDING INFOR	
UNDOT # UN 1866 33 Refer to shipping papers or MSDS DOT HAZARD CLASS 3(14) Refer to shipping papers or MSDS	NFPA 704 HAZARD DIAMOND FIRE (RED) HEALTH (BLUE) SPECIAL HAZARD WHITE OX/W 37
EPCRA YES NO 35	HAZARD H V OXAV
X If EPCRA, Please Sign Here 36	MAKE AS MANY COPIES OF CHEMICAL INVENTORY FORM AS NEEDED

Revised 2/02 -- haz-inven2.doc

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MSDS No: 33501-05 Effective: 01/26/09 Supercedes: 01/29/08 Page: 1 of 7

# 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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 HMISNFPAHealth1Fire3Reactivity000\* = Chronic

HAZARD RATINGS

2. COMPOSITION/INFORMATION ON INGREDIENTS		
COMMON NAME	CAS #	Approximate % (w/w)
Calcium carbonate	471-34-1	10 – 15
Toluene	108-88-3	5 – 10
Methyl Ethyl Ketone	78 - 93 - 3	1 – 5
Titanium dioxide	13463-67-7	1 – 5
Non-hazardous and other ingredients below reportable levels	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

SIN #834-100



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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: 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.

Methyl Ethyl Ketone	-	•	•	RQ = 5000 LB
Toluene				RQ = 1000 lb



MSDS No: 33501-05 Effective: 01/26/09 Supercedes: 01/29/08 Page: 3 of 7

# 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 <sup>3</sup>
Toluene	50	ppm - Skin
Methyl ethyl ketone	200	ppm
Calcium carbonate	10	mg/M <sup>3</sup> Total dust
ACGIH - STEL		
Methyl ethyl ketone	300	ppm
OSHA - PEL		
Titanium Dioxide	10	mg/M <sup>3</sup>
Toluene	100	ppm
Methyl ethyl ketone	200	ppm
Calcium carbonate	5	mg/M <sup>3</sup> 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.



**Material Safety Data Sheet** AC-8350 Class A Base

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

White paste Appearance..... Physical State.....: Liquid Not Applicable pH: Vapor Density: Heavier than air VOC Material: 149 g/l (1.25 lbs/gal) %Non-Vol(w/w): 88%

Odor..... Ketone Solubility.....: Insoluble Vapor Pressure: Not Established Evaporation Rate: Not Established Specific Gravity: 1.27

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/M<sup>3</sup> 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 Dermal LD50 Inhalation LC50	Rat Rabbit Mouse	5,320	5,000 12,124 ppm/8-Hours	mg/kg mg/kg
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.



MSDS No: 33501-05 Effective: 01/26/09 Supercedes: 01/29/08 Page: 5 of 7

### **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 Resin solution		49 CFR Y	IATA Y	IMO Y
	Flammable Liquid 3 (IATA/49CFR) 3.3 (IMO)	UN/NA Id Num: Packing Group.:			

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:

Pennsylvania - New Jersey R-T-K		
Methyl ethyl ketone	78 - 93 - 3	1 – 5
Toluene	108-88-3	5 – 10
	Environmental Hazard.	
Titanium Dioxide	13463-67-7	1 - 5
Calcium carbonate	471-34-1	1 - 5
Non-hazardous trade secret ingredient(s)	Proprietary	Balance

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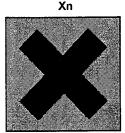
MSDS No: 33501-05 Effective: 01/26/09 Supercedes: 01/29/08 Page: 6 of 7

California - California Proposition 65		
WARNING: This product contains a chemical(s) known to the State of California to cause	se cancer.	
Quartz (crystalline silica)	14808-60-7	< 0.01
Cancer Hazard.		
Formaldehyde	50-00-0	Trace *
Cancer Hazard		

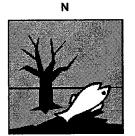
\* Trace = present at less than 0.01 percent.

CONEG - No data available.

# European Union: Preparation classification:







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.



MSDS No: 33501-05 Effective: 01/26/09 Supercedes: 01/29/08 Page: 7 of 7

### **16. OTHER INFORMATION**

1

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

GARDEN GRO

# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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г									Page	of		- 2
	FACILITY ID# 3	0 0 3	5	. A			TEMIST	27 5	ΤEC	HNOLOG	4,IN	10.3
				I. FACIL	ITY INFO	RMATION						
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				II. CHEMI	CAL INFO	RMATION						
		NSULF.	de See	lent		WASTE	Yes 6		SECRET		<b>⊠</b> ™	11
T	COMMON NAME		<u>Classe</u>	<b>P D</b>			9		EPCRA se S Chemica	i Tes	No No	12
	AC CAS#	-250	$\underline{COSS}$	AZARD CLASSES (suppli	<u>250</u>			•# EHS	is "Yes", i	all amounts must be		
			IU FIRE CODE F	WZARD CLASSES (suppl)	ea by GGFD)							13
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Revised 2/02 -- haz-inven2.doc



# **Material Safety Data Sheet** AC-® 250 Class B -1/6 Base

MSDS No: 32502-09 Effective: 01/26/09 Supercedes: 08/29/08 Page: 1 of 6

# 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

2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME

Calcium carbonate Ethyl acetate **Titanium Dioxide** Non-hazardous and other ingredients below reportable levels

# 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 eves, 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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HAZARD RATINGS HMIS NFPA

SIN #834-100 AMS-S-83318

Health	1*	1
Fire	3	3
Reactivity	0	0
	* = Ch	ronic

CAS #	Approximate % (w/w)
471-34-1	20 - 25
141-78-6	1 - 5
13463-67-7	1 - 5
Proprietary	Balance



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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 Established Autoignition: Not Established Method: Seta 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. 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



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# 7. HANDLING AND STORAGE

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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 <sup>3</sup> Total dust
Ethyl acetate	400	ppm
Titanium Dioxide	10	mg/M <sup>3</sup>
OSHA - PEL		
Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
Ethyl acetate	400	ppm
Titanium Dioxide	10	mg/M <sup>3</sup>

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.



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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 <sup>3</sup> /2-Hours

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors was observed at 250-mg/M<sup>3</sup> 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.



MSDS No: 32502-09 Effective: 01/26/09 Supercedes: 08/29/08 Page: 5 of 6

# **14. TRANSPORT INFORMATION**

Weight (lb)

\*

Shipping Name Resin Solution, Flammable

DOT Label: Flammable liquid Hazard Class: 3 (IATA/49CFR) 3.3 (IMO) Packing Group\*: III \*IATA section 3.3.3 viscous substances

# USPS Mailability: No

IMO

49 CFR

IATA

UN/NA Id Num: UN 1866

Y

# **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	e of California to cause ca	ancer.
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

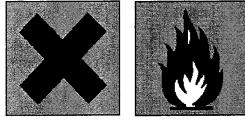
CEPA - NPRI - No regulated ingredients.



MSDS No: 32502-09 Effective: 01/26/09 Supercedes: 08/29/08 Page: 6 of 6

European Union: Preparation classification: Harmful Highly Flar





# 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

HA HA HA HA HA HA HA	ZARDOUS MAT	ERIALS I	NVENTO	RY FC		RM 3
				Page	of	2
FACILITY ID# 3 0 0 3 5	38 BUSINESS NAI ADVAA	ICGD CH	EMISTRY	F TEC	HNOLOGY,	INC.3
	I. FACILITY IN	FORMATION				
CHEMICAL LOCATION MATERIAL ST	ORAGE ARE	A				4
CONFIDENTIAL LOCATION	10 5 MAP #	1	6 GI	RID # (	2-767	7
	II. CHEMICAL IN	FORMATION				
CHEMICAL NAME POLYSULFIDE See	elont	WASTE [	] Yes 8 TR	ADE SECRET	Yes X	No 11
AC-250 Clos	s Allo RCS	e.		EHS Chemica	س ۱۰۰۰ بعز	No 12
CAS # 10 FIRE CODE	HAZARD CLASSES (supplied by GGF	D)	<u>_</u>		all amounts must be LBS	13
TYPE (Check one Kern and)	RE C. WASTE 14	RADIOACTIVE	Yes XNo	15 C	URIES	16
PHYSICAL STATE a. SOLID (Check one New only)	C GAS 17 FED H	ORIES	· · ·		c. PRESSURE RELEASE	18
AVERAGE DAILY		1.19-125	UTE HEALTH	STATE WA	. CHRONIC HEALTH	22
AMOUNT O AMOUNT	23 DAYS ON SITE			CONTAINER		
C. POUNDS d. TONS TI EHS, amount must be in pounds.	365 D	AYS			Gellon De	25 WM
STORAGE CONTAINER (Check all that apply) <ul> <li>a. ABOVEGROUND TANK</li> <li>b. UNDERGROUND TANK</li> <li>c. TANK INSIDE BLDG</li> <li>d. STEEL DRUM</li> </ul>	1. NONMETALLIC DRUM	I. VAT I. FIBER DRUM I. BAG(S) I. BOX(S)	m Cylinder n. Glass con o Plastic co p. In Mach of	ITAINER NTAINER	q. TANK WAGON  r. RAIL CAR  s. TOTE BIN  t. OTHER	26
	b. ABOVE AMBIENT		BELOW AMBIENT			27
	b. ABOVE AMBIENT		BELOW AMBIENT	🔲 d.	CRYOGENIC	28
	PONENT (For mixture or was		EHS		CAS #	
$\frac{1}{2}   1 - 20^{29}   1 - 5$					1317-65-	3 **
15 Calcion cer	boncte	·	Yes No		471-34-	1 32
15 10 LETNY I acet	cte				141-78-6	32
$\frac{1-5}{5} = \frac{29}{29} \text{ Titenium } 1$	Stoxide				3463-67-	32
If more hazardous components are present at greater than 1% by weigh	nt II non-carcinogenic, or 0.1% by weight		Yes No		the required information.	32
	PLACARDING INFO					
UNDOT # UN 1866 Refer to shipping papers DOT HAZARD CLASS 3/JATA/CEP	or MSDS 33		NFPA 704 FIRE (RED) HEALTH (BLUE)	~		
Refer to shipping p	apers or MSDS		SPECIAL HAZARD		WHITE DX/WL <sup>37</sup>	
X If EPCRA, Please Sign			AS MANY CO VENTORY FOI			

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HAZARD RATINGS

HMIS

2\*

3

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Health

Fire

Reactivity

SIN #834-100

NFPA

2

3

0

\* = Chronic

# 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

# 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

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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

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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 <sup>3</sup> Total dust
Calcium carbonate	10	mg/M <sup>3</sup> Total dust
Ethyl acetate	400	ppm
Titanium Dioxide	10	mg/M <sup>3</sup>
OSHA - PEL		-
Limestone	5	mg/M <sup>3</sup> Resp. dust
Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
Ethyl acetate	400	ppm
Titanium Dioxide	10	mg/M <sup>3</sup>

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: Physical State:		Odor: Solubility:	Acetate 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

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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/M<sup>3</sup> 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.



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### 14. TRANSPORT INFORMATION

Weight (Ib.) Shipping Name		49 CFR	IATA	IMO	
Resin solution, Flammable		Y	Y	Y	
DOT Label	Flammable Liquid	UN/NA Id Num:	UN 1866		

DOT Label......: Flammable Liquid Hazard Class...: 3 (IATA/49CFR) 3.3 (IMO) Packing Group..: II UN/NA ld 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). 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:





F+

Harmful Contains: Highly Flammable

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	INVENTOF	RY FORM	FORM	13
ADD DELETE REVISED	1		Page	of	_ 2
FACILITY ID# 3 0 0 3 5 38 BU	DVANCED CH	EMISTRY &	TECHNO	LOGY, IN	JC. <sup>3</sup>
I. FACI	LITY INFORMATION				
MATERIAL STORAGE	AREA				4
CONFIDENTIAL LOCATION Yes X No 5 MAI	P# (	6 GRI	"GZ-	, 47	7
II. CHEM	ICAL INFORMATION				
Polysulfide Sealant	WASTE		DE SECRET	I Yes X No	11
AC-240 CLOSS A Bas	<u>`</u>		HS Chemical	Yes No	12
CAS # 10 FIRE CODE HAZARD CLASSES (SUPP	Nied by GGFD)		IS is "Yes", sil amount	a must de LUS	13
TYPE (Check one Kern only)	E 14 RADIOACTIVE	Yes No	15 CURIES		16
PHYSICAL STATE a. SOLID (Check one Anniony)	CATEGORIES			SURE RELEASE	18
AVERAGE DAILY ZO <sup>19</sup> MAXIMUM DAILY 500	20 ANNUAL WASTE AMOUN	VT 21	STATE WASTE COD		22
UNITS . GALLONS . b. CUBIC FEET 23 DAYS ON SITE	5 DAYS	24 LARGEST C			25
TI EHS, amount must be in pounds.				Non Dror	
(Check all that apply)  b. UNDERGROUND TANK  c. TANK INSIDE BLOG  d STEEL DRUM  h. CARBOY	RUM 🔲 I. FIBER DRUM	m CYLINDER     n. GLASS CONT.     o PLASTIC CON     p. IN MACH OR E	AINER C.R TAINER S.T	TANK WAGON WIL CAR FOTE BIN ITHER	26
STORAGE PRESSURE		BELOW AMBIENT			27
STORAGE TEMPERATURE		BELOW AMBIENT	🔲 d. CRYOGE	ENIC	28
%WT HAZARDOUS COMPONENT (For mixt	ure or waste only)	EHS		CAS #	
1 20-2520 Linestone	30	🗆 Yes 🔲 No	31 131	7-65-3	32
2 10-1323 Tolsene	30	🗌 Yes 🗌 No	31 102	- 88-3	32
3 5-1023 Calcium Carbonate	30	🗋 Yes 🗌 No	31 47	1 - 34 - 1	32
11-5 29 Titanium Drowide	30	Yes No	31 34	03-67-1	32
5 1-5 29 GIV GOX Propy Him If more hazardous components are present at greater than 130 by weight if non-catcinogenic, or 0.	ethyls: lone 30	Yes No	31 252		32
	IG INFORMATION	n socional sheets of pap	er capturing the requir	ed informetion.	
UNDOT # UN 1866 Refer to shipping papers or MSDS DOT HAZARD CLASS 2 TATA (CFR 49) 3.3 (T	- <sup>33</sup>	NFPA 704 H. FIRE (RED)	3 R	ND EACTIVE ELLOW)	
Refer to shipping papers or MSDS	35	SPECIAL HAZARD	WHITE OX/W		
x	MAKE	E AS MANY COP	IES OF CHEM	ICAL	
If EPCRA, Please Sign Here	36 IN	VENTORY FOR	M AS NEEDED	<u>)</u>	

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# 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

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME Limestone Toluene Calcium carbonate Titanium Dioxide Glycidoxypropyltrimethoxysilane 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 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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SIN #834-100 AMS-S-8802

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

Approximate % (w/w)
20 – 25
10 – 15
5 – 10
1 – 5
1 – 5
Balance



0

MSDS No: 32401-10 Effective: 01/26/09 Supercedes: 03/13/08 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: 41°F (4°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 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 mg/M<sup>3</sup> Total dust Limestone 10 Toluene 50 ppm Calcium Carbonate mg/M<sup>3</sup> 10 mg/M<sup>3</sup> **Titanium Dioxide** 10 Manufacturer's PEL/TLV Glycidoxypropyltrimethoxysilane 5 ppm Manufacturer's STEL Glycidoxypropyltrimethoxysilane 10 ppm OSHA - PEL 5 mg/M<sup>3</sup> Resp. dust Limestone 100 ppm Toluene mg/M<sup>3</sup> Resp. dust Calcium Carbonate 5 10 mg/M<sup>3</sup> Titanium Dioxide

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.



**Material Safety Data Sheet** AC-® 240 Class A Base

MSDS No: 32401-10 Effective: 01/26/09 Supercedes: 03/13/08 Page: 4 of 6

Odor: Mercaptan

1.43

Insoluble

Not Established Not Established

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White	Odor:
Physical State:	Liquid	Solubility:
pH:	Not Applicable	Vapor Pressure:
Vapor Density:	Not Established	Evaporation Rate:
VOC Material:	Approximately 168 g/L (1.13 lbs/gal)	Specific Gravity:
%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-h	ours

Titanium Dioxide:

In a 2-year study in rats, an increase in benign and malignant lung tumors was observed at 250 mg/M<sup>3</sup> 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.



49 CFR

IATA

IMO

Y

MSDS No: 32401-10 Effective: 01/26/09 Supercedes: 03/13/08 Page: 5 of 6

UN 1866

#### **14. TRANSPORT INFORMATION**

Weight (lb.)	Shipping Name Resin solution	
	Flammable Liquid 3 (IATA/49CFR) 3.3 (IMO) II	UN/NA ld Num.:

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 Sta	ate 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.



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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 A

CEPA - NPRI - Toluene

# European Union: 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 that 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

TRI-DEPARTIE	r s	HAZ	ARDOUS	ΜΑΤΕ	RIALS	INVEN <sup>.</sup>	TORY		FORM 3
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					RMATION		<u> </u>		/
CHEMICAL LOCAT		255 J	Por	00					4
CONFIDENTIAL LC		I Yes	X No 5 MA	P#	1	6	GRID #	77	7
Ercin			II. CHEN	ICAL INF	ORMATION			L	
CHEMICAL NAME	AL-137 (	Clear Ad	dhesion	Prom.	WASTE	Yes 8	TRADE SEC	RET Yes	No 11
COMMON NAME	************************	SAME			- <b>L</b>	9	An EHS Che		No 12
CAS#		10 FIRE CODE H	AZARD CLASSES (Supp	plied by GGFD)			"If EHS is "Y	es", all amounts must be l	L8513
TYPE (Check one Kem	01107 🔲 a. PURE	THE MIXTURE	c. WAS1	E 14	RADIOACTIVE	Yes \	No 15	CURIES	
PHYSICAL STATE		De Liquid		7 FED HAZ			REACTIVE		
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AVERAGE DAILY AMOUNT	D.1 19	MAXIMUM DAILY AMOUNT	10	20 ANNUA	L WASTE AMOU	NT	21 STATE	WASTE CODE	22
	ALLONS D. CI DUNDS d. TO mount must be in pounds.	UBIC FEET 2 DNS		65 DA	445	24 LAR	GEST CONTAI	Gallon=	25
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STORAGE PRESSUR	E 🔀	. AMBIENT	🗌 b. ABO	VE AMBIENT		BELOW AMBIE	INT		27
STORAGE TEMPERA		. AMBIENT		VE AMBIENT		BELOW AMBIE	INT [	d. CRYOGENIC	26
%WT	1		ONENT (For mix	ture or waste	only)		EHS	CAS	5 #
1 -70-90 29	ETHAN				30	🗆 Yes	🗆 No 3	64-17	- 5 32
2 5-15 29		ATE ES			30	Yes	□ No 3:	TRADE S	ECRE7 32
$\begin{vmatrix} 3 \\ -5 \end{vmatrix} -5$		L ALC			30	C Yes	□ No 31	01 30	
1-3		DPYL P DE SECR	ALCOHOL		30	Yes	□ No 31	61-01	
joarance	Onents are present at gree	-	•	1% by weight if	30 carcinogenic, atta	Yes	No 31	1 1 1 1 1	
•			PLACARDI						
UNDOT #		J1170 Ipping papers o	or MSDS	33	Γ		TO4 HAZAF		
DOT HAZARD C		3	······	34		HEALTH (BLUE)	•{2×		
		to shipping pa	pers or MSDS	35		SPECI HAZAF		WHITE OX/WL 37	
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1. CHEMICAL PRODUCT AND COMPANY INFORMATION

# Material Safety Data Sheet AC-<sup>®</sup> 137 Clear, Adhesion Promoter

MSDS No: 11372-03 Effective: 01/26/09 Supercedes: 02/27/08 Page: 1 of 6

SIN #834-100

#### Product ID: AC-137 Clear Adhesion promoter Generic Description: Titanate mixture HAZARD RATINGS Product Use: Adhesion promoter HMIS NFPA For information, contact: Advanced Chemistry & Technology 2\* 2 Health 7341 Anaconda Avenue Fire 3 3 Garden Grove, CA 92841-2921 714 - 373 - 2837 0 Reactivity 0 \* = Chronic ChemTrec Emergency 1 - 800 - 424 - 9300 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS #	Approximate % (w/w)
Ethanol	64 – 17 - 5	70 - 90
Titanate ester	Proprietary	5 - 15
Methyl Alcohol	67 – 56 - 1	1 - 5
isopropyl Alcohol	67 - 63 - 0	1 - 5
Non - hazardous and other ingredients below reportable levels	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 aicohol	No	No	No	No
Isopropyl Alcohol	No	Group 3	No	No



Material Safety Data Sheet AC-<sup>®</sup> 137 Clear, Adhesion Promoter

MSDS No: 11372-03 Effective: 01/26/09 Supercedes: 02/27/08 Page: 2 of 6

#### 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-<sup>®</sup> 137 Clear, Adhesion Promoter

MSDS No: 11372-03 Effective: 01/26/09 Supercedes: 02/27/08 Page: 3 of 6

#### 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

EAFOSORE GUIDELINES.	EXPOSURE	GUIDEL	INES:
----------------------	----------	--------	-------

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-<sup>®</sup> 137 Clear, Adhesion Promoter

MSDS No: 11372-03 Effective: 01/26/09 Supercedes: 02/27/08 Page: 4 of 6

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear	Odor	
Physical State:	Liquid	Solubility	Insoluble
pH	Not Applicable	Boiling Point	Not Established
Vapor Pressure .:		Vapor Density:	Approximately 5
Evaporation Rt:		VOC Material:	719 g/l
Specific Gravity .:	0.81	% Non - Vol(w/w):	89%
OTE: The physical data	presented above are typical values and should not	be construed as a spe	cification

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**

COMPONE Titanate es				
	Oral LD50	Rat	11,000	mg/kg
	Dermal LD50	Rabbit	> 16	ml/Kg
	Inhalation LC50	Rat	7.78	mg/L/4 - hours
Methyl Alco	phol			
	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
	ETHANC	DL SOLUTIONS	Y	Y	Y
	ass:	Flammable Liquid 3 (IATA/49CFR) 3.2 (IMO) II		ld Num: ailability:	

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Material Safety Data Sheet AC-<sup>®</sup> 137 Clear, Adhesion Promoter

MSDS No: 11372-03 Effective: 01/26/09 Supercedes: 02/27/08 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

(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-<sup>®</sup> 137 Clear, Adhesion Promoter

MSDS No: 11372-03 Effective: 01/26/09 Supercedes: 02/27/08 Page: 6 of 6

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

a color

## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

E DEPARTME					
	ELETE REVISED 1		Page	of	2
FACILITY ID# 3 0 0 3 5	38 BUSINESS NA	UCED CHEMIST	RY & TEC	HNOLOGY, 3	INC.3
	I. FACILITY IN				
CHEMICAL LOCATION	) I Room				4
CONFIDENTIAL LOCATION EPCRA	Yes No 5 MAP#	1	6 GRID#	ĪZ	7
	II. CHEMICAL IN	FORMATION			
CHEMICAL NAME AC-135 Adhe	SION Promoter	WASTE Yes	8 TRADE SECRET		No 11
COMMON NAME	AME		9 An EHS Chemica	ee instructions	io 12
	RE CODE HAZARD CLASSES (supplied by GGI	FD)	"If EHS is "Yes", I	all amounts must be LBS	13
TYPE (Check one Ken only)	MIXTURE C. WASTE 14		ANO 15 C	URIES	16
PHYSICAL STATE	LIQUID C. GAS 17 FED H		b. REACTIVE	c. PRESSURE RELEASE	18
			н Д	8. CHRONIC HEALTH	
AMOUNT AMOUN	UM DAILY 45 20 ANI	NUAL WASTE AMOUNT	21 STATE WA	STE CODE	22
UNITS . GALLONS . D. CUBIC FEE S. C. POUNDS . d. TONS If EHS, amount must be in pounds.	T 23 DAYS ON SITE 365 ]			Gel	25
STORAGE CONTAINER (Check all that apply) Check all that apply (Check all that apply) Check all that a	TANK T. NONMETALLIC DRUM	1. BAG(S) 🗌 o PL/	LINDER ASS CONTAINER ISTIC CONTAINER MACH OR EQUIP	q. TANK WAGON r. RAIL CAR s. TOTE BIN t. OTHER	26
	NT D. ABOVE AMBIEN		BIENT		27
			BIENT d.	CRYOGENIC	28
%WT HAZARDOUS	COMPONENT (For mixture or wa	ste only)	EHS	CAS #	
	20BENZOTEIFLUOR	DE 30 □Yes	🗌 No 31	98-56-6	32
2 5-1529 TITANATE	ESTER	30 🗍 Yes	🗌 No 31	TEADE SEC	e 1/2
3 1-5 29 ORTHO-CHI	OROBENZOTRIFLUC	RIDE 30 TYes	🗌 No 31	88-16-4	32
1 balance TRADES	ECRET	30 🛛 Yes	🗌 No 31	N.A.	32
5 29		30 🗌 Yes	🛛 No 31		32
If more hezerdous components are present at greater than 19	6 by weight if non-carcinogenic, or 0.1% by weigh PLACARDING INFO		heets of paper capturing	the required information.	
UNDOT # UN 2	224		24 70/114 74 00		
Refer to shipping			PA 704 HAZARD I E(RED)	JIAMOND	
DOT HAZARD CLASS	3 34	HEALTH (BLUE)	+220		
Refer to ship	pping papers or MSDS	SPE		WHITE 37	
EPCRA 🛛 YES 🗍 NO	35		ARD 🕊 🗸 🏴	OX/W	
x		MAKE AS MA	NY COPIES OF	CHEMICAL	
If EPCRA, Please	e Sign Here 36		RY FORM AS N		

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## Material Safety Data Sheet AC-<sup>®</sup>135 Adhesion Promoter

MSDS No: 11351-08 Effective: 01/26/09 Supercedes: 08/02/04 Page: 1 of 6

CAS #

98 - 56 - 6

Proprietary 88 - 16 - 4

Proprietary

SIN #834-100

#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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			

Approximate % (w/w)

80 - 90 5 - 15

1 - 5

Balance

#### ChemTrec Emergency 1 - 800 - 424 - 9300

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME Para - chlorobenzotrifluoride

Para - chlorobenzotrifluoride Titanate ester Ortho - chlorobenzotrifluoride Non - hazardous and other ingredients below reportable levels

#### 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**

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, foq, 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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## Material Safety Data Sheet AC-<sup>®</sup>135 Adhesion Promoter

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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 / M<sup>3</sup> 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
Physical State:	Liquid
pH	Not Applicable
Vapor Pressure:	Not Established
Evaporation Rt:	Not Established
Specific Gravity	1.29
Non - Vol(w/w):	Not Established

Odor.....StrongSolubility......InsolubleBoiling Point....Not EstablishedVapor Density.:Approximately 5VOC Material...23.5 g/l (0.20 lb/gal)VOC Coating...146 g/l (1.23 lb/gal)

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.



## Material Safety Data Sheet AC-<sup>®</sup>135 Adhesion Promoter

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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
	Chlorobe	enzotrifluorides solution	Y	Y	Y
Hazard Cla		Flammable Liquid 3 (IATA/49CFR) 3.3 (IMO) III		IA Id Num: S Mailability:	

#### **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



## **Material Safety Data Sheet** AC-<sup>®</sup>135 Adhesion Promoter

98 - 56 - 6

Proprietary

88 - 16 - 4

Proprietary

80 - 90

5 - 10

1 - 5

Balance

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Y - Delayed (chronic) Health Hazard

Ozone - Depleting Chemicals - No regulated ingredients.

SARA Section 302 (TPQ) - No regulated ingrediants.

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 Titanate ester Ortho - chlorobenzotrifluoride Non - hazardous trade secret ingredient(s)

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.



## Material Safety Data Sheet AC-<sup>®</sup>135 Adhesion Promoter

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End of Material Safety Data Sheet

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## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

		REVISED 1			Page	of	
FACILITY ID# 3 0 0 3	5	38 BUSINE AD	SS NAME VANCED C	HEMISTR	TEC	HNOLOGY,	INC.
			Y INFORMATION				
CHEMICAL LOCATION	CLASS	I Room	<b>1</b>				4
CONFIDENTIAL LOCATION EPCRA	Yes 🗌	No 5 MAP#	1	6	GRID #	I2	7
		II. CHEMICA	L INFORMATION				
CHEMICAL NAME METHYL	ETHYL I	KETONE	WASTE	Yes 8	TRADE SECRET	r 🗌 Yes 🎾	€N₀ 11
COMMON NAME	ME	K		9	An EHS Chemica		No 12
CAS# 78-93-3		ARD CLASSES (supplied b	y GGFD)		*If EHS is "Yes",	all amounts must be LBS	13
TYPE (Check one Kern only) DLa. PURE			14 RADIOACTIVE			<u> </u>	
PHYSICAL STATE		□ c. WASTE	FED HAZARD	□ Yes 万×	<u> </u>	URIES	16
(Chect one kem only)		C. GAS	CATEGORIES	FIRE D. RI		c. PRESSURE RELEAS	SE 18
AVERAGE DAILY 200	19 MAXIMUM DAILY AMOUNT	500 <sup>20</sup>	ANNUAL WASTE AMOU		STATE WA	STE CODE	22
	CUBIC FEET 23 TONS	DAYS ON SITE	DAYS		ST CONTAINER		25
"If EHS, amount must be in pou						Gar Drun	·
(Check ell that apply)		PLASTIC DRUM     NONMETALLIC DRUM     METAL CONTAINER     CARBOY	☐ I. VAT ☐ I. FIBER DRUM ☐ I. BAG(S) ☐ I. BOX(S)	I m CYLINDI n. GLASS ( 0 PLASTIC p. IN MACH	CONTAINER	q. TANK WAGON	26
STORAGE PRESSURE		b. ABOVE AN		BELOW AMBIENT			27
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	ARDOUS COMPO	NENT (For mixture of	or waste only)	EH	S	CAS #	
29		·····	30	🖸 Yes 🛛	No 31		32
29			30	🗆 Yes 🗖	No 31		32
29			30	🗆 Yes 🗖	No 31		32
29			30	🗆 Yes 🛛	No 31		32
29			30		No 31		32
more hezerdous components are present at g	ireater than 1% by weight if n	PLACARDING I		ch additional sheets o	d paper capturing	the required information.	
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Rei	fer to shipping pape	ers or MSDS		SPECIAL	XX	WHITE	
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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

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#### 1. MATERIAL AND COMPANY IDENTIFICATION

Material Name Uses Product Code Company	<ul> <li>Methyl Ethyl Ketone</li> <li>Use as a solvent only in industrial manufacturing processes.</li> <li>S2113</li> <li>Shell Chemical LP PO Box 2463 HOUSTON TX 77252-2463</li> </ul>
MSDS Request	USA : 1-800-240-6737
Customer Service	: 1-866-897-4355
Emergency Telephone Nu	mber
Chemtrec Domestic (24 hr)	: 1-800-424-9300
Chemtrec	: 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

International (24 hr)

Appearance and Odour	Emergency Overview : Clear. Liquid. Characteristic.
Health Hazards	<ul> <li>Irritating to eyes. Vapours may cause drowsiness and dizziness. Harmful: may cause lung damage if swallowed.</li> </ul>
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	<ol> <li>Slightly irritating to respiratory system. Vapours may cause drowsiness and dizziness.</li> </ol>
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

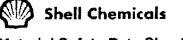
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day, February 21, 2008 Shell Chemicals	Methyl Ethyl Keton MSDS# 539
Shell Chermicars	Version 14.3
Material Safety Data Sheet	Effective Date 11/26/200 According to OSHA Hazard Communication Standard, 29 CFF 1910.1200
Aggravated Medical : Conditioп	sensation 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. 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-emerg	ency personnel.
Flash point :	-4 °C / 25 °F (Abel)
England / Elemana - Star	$10 11 = 0/\Omega$

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 Explosion / Flammability	:	1.8 - 11.5 %(V)
limits in air		
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.

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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

#### 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	<ul> <li>For large liquid spills (&gt; 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.</li> <li>For small liquid spills (&lt; 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.</li> </ul>
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
 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.

Print Date 01/10/2006

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Thursday,	February	21,	2008

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Shell Chemicals	Methyl Ethyl Ketone MSDS# 5390
Material Safety Data Sheet	Version 14.3 Effective Date 11/26/2005 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200
Storage	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. 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 : Container Advice :	Aluminium. Plastics. Natural, neoprene or nitrile rubbers. 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	Туре	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	<ul> <li>Shell has adopted as Interim Standards, the OSHA PELs that were established in 1989 and later rescinded.</li> <li>Wash hands before eating, drinking, smoking and using the toilet.</li> </ul>
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	: Personal protective equipment (PPE) should meet
Equipment	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
	4/9

Print Date 01/10/2006

Thursday, February 21, 2008 Methyl Ethyl Ketone Shell Chemicals MSDS# 5390 Version 14.3 Material Safety Data Sheet Effective Date 11/26/2005 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200 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.oshaslc.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** Local guidelines on emission limits for volatile substances must Controls be observed for the discharge of exhaust air containing vapour.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odour Boiling point Flash point Explosion / Flammability limits in air	: Clear. Liquid. : Characteristic. : 79 - 80.5 °C / 174 - 176.9 °F : -4 °C / 25 °F (Abel) : 1.8 - 11.5 %(V)
Auto-ignition temperature Vapour pressure Specific gravity	: 515 ℃ / 959 ℉ (ASTM E-659) : 9,500 Pa at 20 ℃ / 68 ℉ : 0.804 - 0.806 at 20 ℃ / 68 ℉
Water solubility Solubility in other solvents Vapour density (air=1) Volatile organic carbon content	: 250 g/l at 20 °C / 68 °F Miscible. : Alcohol(s) Completely miscible. : 2.4 at 20 °C / 68 °F : 100 %
Evaporation rate (nBuAc=1)	: 3.7 (ASTM D 3539, nBuAc=1)

Thursday, February 21, 2008



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

#### 10. STABILITY AND REACTIVITY

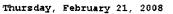
Stability	:	Stable under normal conditions of use. Reacts with strong oxidising agents.
Conditions to Avoid Materials to Avoid		Avoid heat, sparks, open flames and other ignition sources. Strong oxidising agents.
Hazardous Decomposition Products		Thermal decomposition is highly dependent on conditions. 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 Acute Oral Toxicity		Information given is based on product testing. 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 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.
Skin Irritation	:	Low toxicity: LC50>5000 ppm / 1 hours, Rat 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 Additional Information	:	Causes slight foetotoxicity. Effects were seen at high doses only. Exposure may enhance the toxicity of other materials.

#### 12. ECOLOGICAL INFORMATION

Acute Toxicity Fish Aquatic Invertebrates Algae Microorganisms	<ul> <li>Low toxicity: LC/EC/IC50 &gt; 1000 mg/l</li> <li>Low toxicity: LC/EC/IC50 &gt; 100 mg/l</li> <li>Low toxicity: LC/EC/IC50 &gt; 1000 mg/l</li> <li>Low toxicity: LC/EC/IC50 &gt; 1000 mg/l</li> </ul>
Mobility Persistence/degradability Bioaccumulation	<ul> <li>Dissolves in water.</li> <li>Readily biodegradable meeting the 10 day window criterion.</li> <li>Oxidises rapidly by photo-chemical reactions in air.</li> <li>Not expected to bioaccumulate significantly.</li> </ul>





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

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)

oo beparanent or manapona	
Identification number	UN 1193
Proper shipping name	Methyl ethyl ketone
Class / Division	3
Packing group	И
Hazardous subst./material RQ:	METHYL ETHYL KETONE/5,000.00 LB
Emergency Response Guide	127
No .	
IMDG	
Identification number	UN 1193
Proper shipping name	METHYL ETHYL KETONE
Class / Division	3
Packing group	11
Marine pollutant:	No
IATA (Country variations may	apply)
Identification number	UN 1193
Proper shipping name	Methyl ethyl ketone

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#### 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

Print Date 01/10/2006

Class / Division

Packing group

Listed.

MSDS\_US

Thursday, February 21, 2008

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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%

#### Pennsylvannia Right-To-Know Chemical List

Methyl ethyl ketone (78-93-3) 100.00%

Environmental hazard. Listed.

#### 16. OTHER INFORMATION

HMIS Rating (Health, Fire, Reactivity) NFPA Rating (Health, Fire, Deschirite)		2, 3, 0 1, 3, 0
Fire, Reactivity) MSDS Version Number	:	14.3
MSDS Effective Date	:	11/26/2005
MSDS Revisions MSDS Regulation		A vertical bar ( ) in the left margin indicates an amendment from the previous version. The content and format of this MSDS is in accordance with the

Thursday, February 21, 2008	
Shell Chemicals	Methyl Ethyl Ketone MSDS# 5390
Material Safety Data Sheet	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.

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ARDEN GROUT

## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

1	EPART																	
		ADD			Ë		ED 1							Page		of		_ 2
FACILIT	Y ID# 3	0 0	3 5			38	BUSIN	NESS NAME	:6D	CI	HEMIS	TRY	5 T	Ech	INOL	044	, IN	JC, <sup>3</sup>
						I. F		TY INFO										
CHEMIC	AL LOCATION	N		R	) Iew	MA			-		<del>.</del> e							4
CONFID	ENTIAL LOCA	TION			ies D		r					6	GRID #		Ja	-		7
						11. Cł	HEMIC	AL INFO	ORMA	TION					<u></u>			
CHEMIC	AL NAME	Ethy	<u>, (c</u>	Ace	ta-	1			WAST		🗌 Yes	8	TRADE SE		-	] Yes	X~∞	11
COMMON	NAME	·	<u>-</u> 3;	AME	• •							9 4	• If EPC		instructio	ns ] Yes		12
CAS#	141-7	18-6	10	FIRE CO	DE HAZA	RD CLASSES	(supplied	by GGFD)				·	<u>f EHS is "</u>	Yes", ail	amounts	must be L	BS	13
TYPE (Ch	ick one item only)	Za. Pl	JRE	b, міхт	TURE	[] a. \	WASTE	14 5	ADIOAC	TIVE	Ves	K N	o 15	CUI	RIES	<u></u>		16
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2	29									30	🗆 Yes		No 3	,				32
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Revised 2/02 -- haz-inven2.doc

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Product name: MSDS number: Material number: Published date: Ethyl acetate 34 MSDS-034 03/21/2001(V2)

## MATERIAL SAFETY DATA SHEET

### 1. Product and Company Identification

Product:Ethyl acetateMSDS number:34Material 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 l'information on ingredients

Component & CAS Number	Weight %	OSHA hazard category:
ETHYL ACETATE 141-78-6	99.5	Hazardous

J. Hazards tomorrow

#### **Emergency Overview:**

#### DANGERI

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- 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

 800 835 5235
 Celanese, 24 hrs/day

 Page 1 of 14
 14

Product emergency:

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CHEMICALS

Product name: MSDS number: Material number: Published date:

Ethyi acetate 34 MSDS-034 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

. First XX Moderness

#### 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.

#### Eves:

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.

S. Phy Fighting Motsures NFPA: Health: 1 Flammability: 3 Reactivity: 0 Flammable properties -4.5 C (24 F) (Closed Cup) Flash point (test method): Flammable limits in air, % by volume: Upper: 9%

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	
Page 3	of 14	
	703 527 3887 800 835 5235	703 527 3887 Outside USA, collect calls accepted, 24 hrs/day

Product name: Ethvl acetate **MSDS** number: 34 MSDS-034 Material number: Published date: 03/21/2001(V2) 2.2 % Lower: 427 C (800 F) Autoignition temperature: Products of combustion: Carbon Monoxide. Use alcohol type aqueous film forming foam for large fires. Use CO<sub>2</sub> or dry chemical **Extinguishing Media:** for small fires. Fire Fighting Environmental Concerns/Japors and combustion gases can be controlled using a water fog stream. Thoroughly decontaminate bunker gear and other fire-fighting equipment before reuse. **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 selfcontained 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.

CHEMICALS

6. 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 wellventilated 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 in 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:

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 Page 4 of 14

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Celanese CHEMICALS

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Product name: MSDS number: Material number: Published date:	Ethyl acetate 34 MSDS-034 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 solled 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.
e la terra de la constante des desembres estas de constantes	
如道:"这里不以的要求 <i>的了</i> 的资 <b>证的</b> 是有资料的证书的。"	8. Exposure Controls / Personal Protocoon
Engineering Controls:	General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred.
Protective Equipme	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.
Eyelface 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 - Product emerge	703 527 3887 Outside USA, collect calls accepted, 24 hrs/day

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## Celanese CHEMICALS

Ethyl acetate Product name: 34 MSDS number: MSDS-034 Material number: 03/21/2001(1/2) Published date: Acute Exposure: 99.5 ETHYL ACETATE 41-78-6 Oral LD50: 5620 to 10170 mg/kg (rats); ethyl acetate is practically nontoxic to animals by ingestion. nhalation: 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. 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). 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. 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. Mutagenicity: n Vitro: Results were equivocal. Ethyl acetate was negative in two Ames ests with Salmonella typhimurium and in a recombination assay with Bacillus subtilis. 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 an uploidy with Saccharomyces cerevisiae, it was positive four times. It was negative for chromosomal aberrations in CHO cells, but positive in Chinese hamster lung libroblasts. n Vivo: Not Mutagenic: Ethyl acetate was negative in three separate micronucleus assays - mouse (i.p.), Chinese hamster (i.p.), and Chinese

Transportation emergency:

Product 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 Page 8 of 14



Product name: Ethyl acetate MSDS number: 34 MSDS-034 Material number: Published date: 03/21/2001(V2) hamster (gavage). Carcinogenicity: No studies conducted according to established scientific principles. 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.

TZ. Ecological Information

Component & CAS Number	Component Ecological Information:

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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
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Celanese CHEMICALS

Product name: MSDS number: Material number: Published date:	3 N	Ethyl acetate 4 ISDS-034 3/21/2001(V2)
	-	<ul> <li>Mollusc (Lymnea stagnalis) 48-hr. EC50 = 1100 ppm.</li> <li>Platyhelminthe (Dugesia lugubris) 24-hr. EC50 = 3020 ppm.</li> <li>Hirudinean (Erpobdella octoculata) 48-hr. EC50 = 1200 ppm.</li> <li>Algae (Microcystis aeruginosa) 8-day Toxicity Threshold = 550 ppm.</li> <li>Algae (Scenedesmus quadricauda) 8-day TT = 15 ppm.</li> <li>Algae (Scenedesmus pannonicus) 48-hr. NOEC &gt; 1000 ppm.</li> <li>Algae (Scenedesmus subspicatus) 72-hr. NOEC &gt; 1000 ppm.</li> <li>Algae (Scenedesmus subspicatus) 48-hr. EC50 = 3300 to 5600 ppm.</li> <li>Algae (Scenedesmus subspicatus) 48-hr. NOEC &gt; 1000 ppm.</li> <li>Algae (Scenedesmus subspicatus) 48-hr. NOEC = 2000 ppm.</li> <li>Algae (Scenedesmus subspicatus) 48-hr. NOEC = 2000 ppm.</li> <li>Algae (Chlorella pyrenoidosa) 48-hr. NOEC &gt; 1000 ppm.</li> <li>Protozoa (Chilomonas paramecium) 48-hr. TT = 3248 ppm.</li> <li>Protozoa (Chilomonas paramecium) 48-hr. TT = 3248 ppm.</li> <li>Protozoa (Uronema parduzci) 20-hr. TT = 1620 ppm.</li> <li>Bacteria (Photobacterium phosphoreum) 15-min. EC50 = 5870 ppm.</li> <li>Bacteria (Photobacterium phosphoreum) 5-min. EC50 = 1180 ppm.</li> <li>Bacteria (Pseudomonas fluorescens) 2-hr. EC50 = 7400 ppm.</li> <li>Bacteria (Pseudomonas fluorescens) 15-min. EC50 = 1500 ppm.</li> <li>Bacteria (Pseudomonas putida) 16-hr. TT = 650 ppm.</li> <li>Bacteria (Pseudomonas putida) 18-hr. EC10 = 2900 ppm.</li> </ul>
		Chronic Exposure: Fish (Pimephales promelas) 32-day Chronic LOEC = 9.65 ppm

Transportation emergency:

Product emergency:

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 800 424 9300
 CHEMTREC, 24 hrs/day

 703 527 3887
 Outside USA, coffect calls accepted, 24 hrs/day

 800 835 5235
 Celanese, 24 hrs/day

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Celanese CHEMICALS

Product name: MSDS number: Material number: Published date:	Ethyl acetate 34 MSDS-034 03/21/2001(V2)
Published date:	Environmental Fate: 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. <b>Bioaccumulation:</b> 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.

TJ. 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

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Celanese CHEMICALS

Product name:	Ethyl acetate
MSDS number:	34
Material number:	MSDS-034
Published date:	03/21/2001(V2)
US Department of Transportatio	n
Shipping name:	ETHYL ACETATE
Hazard class:	3 (Flammable Liquid)
UN/NA Number:	UN 1173
Packing Group:	
DOT Reportable Quantity (RQ):	5000 lbs/2270 kg (Ethyl acetate)
Emergency Response Guide:	129
Proper Shipping Name:	ETHYL ACETATE
Hazard Classification: IATA UN Number: Packing group: Label:	3 (Flammable Liquid) UN 1173 II (Flammable Liquid)
IMDG:	
Proper Shipping Name:	ETHYL ACETATE
Hazard Class:	3 (Flammable Liquid)
International Marine UN Number:	UN 1173
Packing Group: Flash point (test method):	ll -4.5 C (24 F) (Closed Cup)
maan ponte (wat metroo):	
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

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..... CHEMTREC, 24 hrs/day Outside USA, collect calls accepted, 24 hrs/day Celanese, 24 hrs/day 800 424 9300 Transportation emergency: 703 527 3887 800 835 5235 Product emergency: Page 12 of 14

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Celanese CHEMICALS

Product name: MSDS number: Material number: Published date:	Ethyl acetate 34 MSDS-034 03/21/2001(V2)	
Pennsylvania	Listed	
New York	Listed	
New Jersey	Listed	
Illinois	Listed	
Massachusette	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

16. Other Information

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Prepared by:

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Product Stewardship Department Celanese Ltd.

Transportation emergency:

Product emergency:

 800 424 9300
 CHEMTREC, 24 hrs/day

 703 527 3887
 Outside USA, collect calks accepted, 24 hrs/day

 800 835 5235
 Celanese, 24 hrs/day

 Page 13 of 14
 Celanese, 24 hrs/day

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Product name:Ethyl acetateMSDS number:34Material number:MSDS-034Published 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.

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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

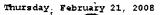
 Page 14 of 14
 14

# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

DEPART		,				
ADD	DELETE	REVISED 1		I	Page of	2
FACILITY ID# 3 0 0 3	5	38 BUSINESS NAME	CEN CHEN	AISTRY ST	ECHNOLOGY	3
		I. FACILITY INFO			SCHNOLOGY	, INC.
CHEMICAL LOCATION						4
	RAW M	JATERIAL	Stors	ae		
CONFIDENTIAL LOCATION EPCRA	🗌 Yes 🕱	No 5 MAP#	L	6 GRID#	55	7
		II. CHEMICAL INF	ORMATION			
CHEMICAL NAME TOLUE	NE		WASTE Y	as 8 TRADE SE	CRET Yes	No 11
COMMON NAME	··· C		<u> </u>		RA see instructions	
	SAME				emical Yes [ 'es", all amounts must be LBS	No 12
CAS# 108-88-3	10 FIRE CODE HAZARD	CLASSES (supplied by GGFD)			es , al anounts must be LBS	13
TYPE (Check one tem only)	b. MIXTURE	C. WASTE 14		Yes XNo 15	CURIES	16
PHYSICAL STATE		c. GAS 17 FED HAZ				
(Check one New only)					CHRONIC HEALTH	
AVERAGE DAILY AMOUNT	IS MAXIMUM DAILY AMOUNT 3		L WASTE AMOUNT	21 STATE	WASTE CODE	22
	CUBIC FEET 23 D	AYS ON SITE		24 LARGEST CONTAI	 NER	25
C. POUNDS d. "If EHS, amount must be in poun		365 DA	445	5	O GAL DRIEL	
		PLASTIC DRUM II i. ONMETALLIC DRUM II I.				v 26
	(INSIDE BLDG 🛛 🗖 g. N	IETAL CONTAINER	BAG(S)	n. GLASS CONTAINER		
			BOX(S)	P. IN MACH OR EQUIP	L OTHER	=
STODAGE TRUBER AND	AMBIENT				d. CRYOGENIC	27
%WT HAZ	ARDOUS COMPONE			EHS	CAS #	28
1 100 29 Tolue				Yes 🗍 No 3		
2 29			30 🔲		100-88-	
3 29			30 🗆			32
4 29						32
5 29						32
H more hezardous components are present at gr	weter then 1% by weight if non-c.	arcinogenic, or 0.1% by weight if				32
		LACARDING INFOR	MATION	tones sneets of paper capt	iring the required information.	
UNDOT # UN	v 1294		r			
Refer to s	hipping papers or MS	DS 33		NFPA 704 HAZAF	DIAMOND	
DOT HAZARD CLASS	3	34	HE			
	er to shipping papers		(B	SPECIAL		
EPCRA I YES I NO		35		HAZARD 🕈 🗸	WHITE OX/WL 37	
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Revised 2/02 -- haz-inven2.doc





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 Uses Product Code Company	<ul> <li>Toluene</li> <li>Raw material for use in the chemical industry.Solvent.</li> <li>T1402, Q9138, Q9131</li> <li>Shell Chemical LP</li> <li>PO Box 2463</li> <li>HOUSTON TX 77252-2463</li> <li>USA</li> </ul>	
MSDS Request	1-800-240-6737	
Customer Service	1-800-872-7435	
Emergency Telephone Nur	er	
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

Appearance and Odour	Emergency Overview : Colourless. Liquid, Aromatic.
Health Hazards	: Vapours may cause drowsiness and dizziness. Irritating to
Safety Hazards	<ul> <li>eyes. Harmful: may cause lung damage if swallowed.</li> <li>Flammable. Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a</li> </ul>
•	flashback fire danger. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.
Environmental Hazards	: Toxic to aquatic organisms.
Health Hazards	
Inhalation	<ul> <li>Slightly irritating to respiratory system. Vapours may cause drowsiness and dizziness.</li> </ul>
Skin Contact	<ul> <li>May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking.</li> </ul>
Eye Contact	: Irritating to eyes.
Ingestion	: Harmful: may cause lung damage if swallowed.
Other Information	<ul> <li>Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s): Cardiovascular system.</li> </ul>
	Central nervous system (CNS). Auditory system.

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Thursday, February 21, 2008	
Shell Chemicals	Toluene MSDS# 7750
Material Safety Data Sheet	Version 17. Effective Date 06/24/2003 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200
	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 : Inhalation :	Keep victim calm. Obtain medical treatment immediately. DO NOT DELAY. Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
Skin Contact :	
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

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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.

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Shell Chemicals	Toluene MSDS# 7750 Version 17.	
Material Safety Data Shee	Effective Date 06/24/2003 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200	
Extinguishing Media	<ul> <li>Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.</li> </ul>	
Unsuitable ExtInguishing Media	: Do not use water in a jet.	
Protective Equipment for Firefighters Additional Advice	<ul> <li>Wear full protective clothing and self-contained breathing apparatus.</li> <li>Keep adjacent containers cool by spraying with water.</li> </ul>	

## 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
r i otocii vo inodamiga	Insolate hazard area and deny entry to unrecessal you 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	<ul> <li>Notily 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.</li> </ul>
. HANDLING AND STORAGE	
	: Avoid breathing of or contact with material. Only use in well

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Shell Chemicals	Toluene MSDS# 7750 Version 17.
laterial Safety Data She	Effective Date 06/24/2003 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200
Handling	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. 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 (and the shares of the state).
	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
Product Transfer	<ul> <li>accumulation in pits and confined spaces.</li> <li>Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.</li> </ul>
Recommended Materials	<ul> <li>For containers, or container linings use mild steel, stainless steel.</li> </ul>
Unsuitable Materials Container Advice	<ul> <li>Natural, butyl, neoprene or nitrile rubbers.</li> <li>Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform</li> </ul>
Additional Information	<ul> <li>similar operations on or near containers.</li> <li>Ensure that all local regulations regarding handling and storage facilities are followed.</li> </ul>

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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# **Occupational Exposure Limits**

Material	Source	Туре	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

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raday, Pebruary 21, 2008 Shell Chemicols	Totuene MSDS# 7750
	Version 17.
Material Safety Data Sheet	Effective Date 06/24/2003 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200
	the eyes or muccus 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 Respiratory Protection :	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. 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 : Protective Clothing :	Chemical splash goggles (chemical monogoggles). 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.

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)

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Shell Chemicals	
Material Safety Data She	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/m3 at 15 °C / 59 °F
Water solubility	: 0.515 kg/m3
n-octanol/water partition coefficient (log Pow)	: 2.65
Kinematic viscosity	: 0.63 mm2/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 Volatile organic carbon content	: Typical 2.4 100 %
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
	Prevent vapour accumulation.
Materials to Avoid Hazardous Decomposition Products	<ul> <li>Prevent vapour accumulation.</li> <li>Strong oxidising agents.</li> <li>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.</li> </ul>
Hazardous Decomposition	<ul> <li>Strong oxidising agents.</li> <li>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.</li> </ul>
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Hazardous Decomposition Products	<ul> <li>Strong oxidising agents.</li> <li>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.</li> <li>TION</li> <li>Information given is based on product data.</li> <li>Low toxicity: LD50 &gt;2000 mg/kg, Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.</li> <li>Low toxicity: LD50 &gt;2000 mg/kg, Rat High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.</li> <li>May cause moderate irritation to skin. Prolonged/repeated contact may cause defatting of the skin</li> </ul>

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Thursday, February 21, 2008

Toluene **Shell Chemicals** MSDS# 7750 Version 17. Effective Date 06/24/2003 Material Safety Data Sheet According to OSHA Hazard Communication Standard, 29 CFR 1910 1200 Not a skin sensitiser. Sensitisation **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. : Not carcinogenic in animal studies. Carcinogenicity Material **Carcinogenicity Classification** • ACGIH Group A4: Not classifiable as a human carcinogen. ; Toluene IARC 3: Classification not possible from current data. Toluene Causes foetotoxicity in animals at doses which are maternally Reproductive and : **Developmental Toxicity** 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** Toxic: 1 < LC/EC/IC50 <= 10 mg/l Fish Harmful: 10 < LC/EC/IC50 <= 100 mg/l Aquatic invertebrates Low toxicity: LC/EC/IC50 > 100 mg/l Algae Mobility Floats on water. If product enters soil, it will be highly mobile and may contaminate groundwater. Readily biodegradable meeting the 10 day window criterion. Persistence/degradability Oxidises rapidly by photo-chemical reactions in air. Does not bioaccumulate significantly. **Bioaccumulation** 

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Thursday, February 21, 2008 Shell Chemicals	Toluene MSDS# 7750
Material Safety Data Sheet	Version 17. Effective Date 06/24/2003 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200
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	
Materiał 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	1161 4004
	UN 1294
Proper shipping name	Toluene
Class / Division	3
Packing group	11
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	
Marine pollutant:	No
ATA (Country variations may	analizi
Identification number	UN 1294

UN 1294
Toluene
3
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# 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 DSL	Listed. Listed.	
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## Thursday, February 21, 2008



# Material Safety Data Sheet

MSDS# 7750 Version 17. Effective Date 06/24/2003 According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Toluene

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.	

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# 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%

# Pennsylvannia Right-To-Know Chemical List

Toluene (108-88-3) 100.00%

Environmental hazards Listed.

#### 16. OTHER INFORMATION

HMIS Rating (Health, Fire, : 2, 3, 0

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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) MSDS Version Number		2, 3, 0 17
MSDS Effective Date	:	06/24/2003
MSDS Revisions MSDS Regulation	:	A vertical bar () in the left margin indicates an amendment from the previous version. The content and format of this MSDS is In accordance with the
Uses and Restrictions	:	OSHA Hazard Communication Standard, 29 CFR 1910.1200. 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.

Print Date 08/13/2003

CARDEN GROUT

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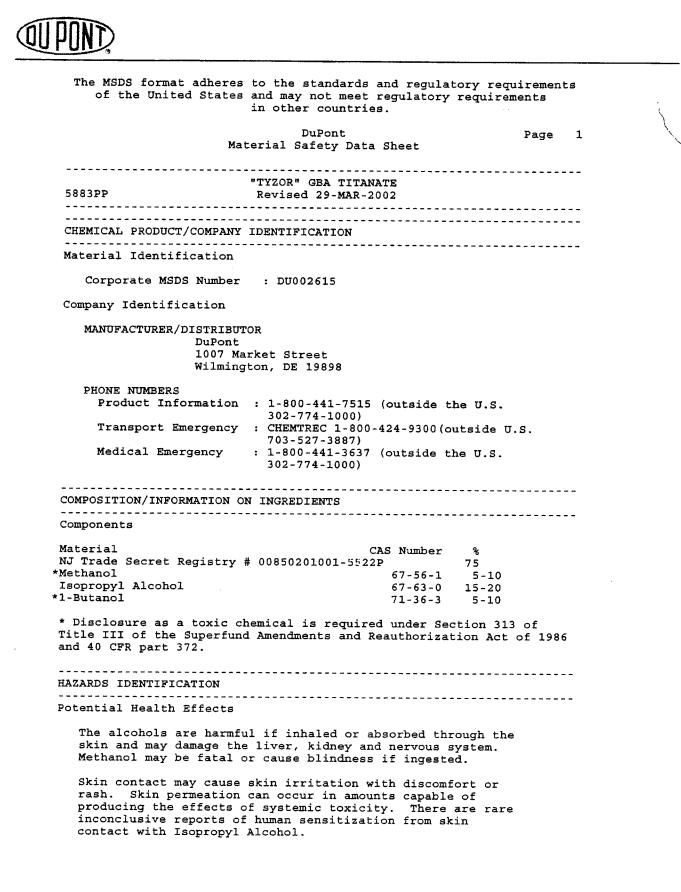
# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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DuPont Material Safety Data Sheet

#### (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 prexisting 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

5883PP

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.

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(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.

#### DuPont Material Safety Data Sheet

5883PP

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 nonsparking 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. ł

#### DuPont Material Safety Data Sheet

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 : 200 ppm, 260 mg/m3, 8 Hr. TWA : 200 ppm, 8 Hr. TWA, Skin PEL (OSHA) TLV (ACGIH) STEL 250 ppm AEL \* (DuPont) : 200 ppm, 8 & 12 Hr. TWA, Skin Isopropyl Alcohol (OSHA) PET. : 400 ppm, 980 mg/m3, 8 Hr. TWA : 400 ppm, 8 Hr. TWA STEL 500 ppm TLV (ACGIH) Notice of Intended Changes (2002) 200 ppm, 8 Hr. TWA, A4 STEL 400 ppm AEL \* (DuPont) : 400 ppm, 8 & 12 Hr. TWA 1-Butanol : 100 ppm, 300 mg/m3 : Ceiling 50 ppm, Skin PEL (OSHA) TLV (ACGIH) 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.

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Page 6
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                          DuPont
                 Material Safety Data Sheet
  _____
PHYSICAL AND CHEMICAL PROPERTIES
_____
Physical Data
  Boiling Point: 70 C (158 F) @ 760 mm Hg% Volatiles: 25 WT%Solubility in Water: Dispersible
                     : Slightly acidic
  \mathbf{p}\mathbf{H}
  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
     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
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5883PP

### (TOXICOLOGICAL INFORMATION - Continued)

Oral LD50:	4,700 mg/kg	in	rats
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1-Butanol

Inhalation 4 hour LC50:>8,000 ppm in ratsSkin Absorption LD50:3,400 mg/kg in rabbitsOral 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 epethelial 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.

Page 7 "

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Page 8
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                         DuPont
                 Material Safety Data Sheet
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)
                    : FLAMMABLE LIQUID
  Hazard Class
                    : UN 1993
: FLAMMABLE LIQUID
  I.D. No. (UN/NA)
  DOT Label(s)
  DOT/IMO
                  : FLAMMABLE LIQUID N.O.S.
  Proper Shipping Name
                     (CONTAINS ISOPROPANOL AND METHANOL)
                    : 3
  Hazard Class
                    : 1993
: FLAMMABLE LIQUID
  UN NO.
  DOT/IMO Label
                   : FLASH POINT: >12 C
  Special Information
  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
: Yes
  Reactivity : No
  Pressure : No
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5883PP	DuPont	Page 9
	Material Safety Data Sheet	
OTHER INFORMATION	·····	
NFPA, NPCA-HMIS		
NPCA-HMIS Rating	I	
Health	: 3	
Flammability	: 3	
Reactivity	: 0	
The data in this specific materia	Material Safety Data Sheet relat 1 designated herein and does not 2 any other material or in any proc	es only to the relate to use in
	and course material of an any pro-	
Responsibility f	or MSDS : MSDS Coordinator	
Address	: DuPont Chemical Solution	ns Enterprise
Telephone	Wilmington, DE 19898 : 800-441-7515	
# Indicates upda	ted section.	
	s based upon technical information	

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ble. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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							I. F.	ACILIT	INF	ORMA	TION								
ſ	CHEMIC	AL LOCATK	NC		Ľ,	۵B													4
	CONFIDE	ENTIAL LOC	ATION		۵	Yes	X No 5	MAP #	(				6	GRID #		J7			7
							II. CH	IEMIC.	AL IN	ORM/	ATION								
ſ	CHEMICA PR		RЧ	AMY	L ACE	747	E, MIXE	52		WAS	STE	🗌 Yes	8 1	RADE SE			] Yes	No	11
ſ	COMMON	NAME	<u>ح</u>	SAME	, ,									n EHS Ch	emical	_	] Yes	No No	12
F	AS #				10 FIRE	CODE H	IAZARD CLASSES	(supplied	by GGF	))			<u> </u>	f EHS is "	(es", <u>al</u>	amounts	must be L	<u>85</u>	13
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U	NITS	GAL	LONS		CUBIC FEET	2	3 DAYS ON SIT						LARGES	T CONTA	INER				25
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		CONTAINE thet apply)		b. UNDE	EGROUND TAI RGROUND TAI INSIDE BLDG L DRUM	vk [	. PLASTIC DF . NONMETALL . 9. METAL CON . h. CARBOY	IC DRUM		i. VAT I. FIBER I. BAG(S I. BOX(S)	)	- A n. c	LASTIC C	ONTAINER	R R	□ q. TA □ r. RA □ s. TO □ 1. OTI	IL CAR	ON	26
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	%∖	NT		HAZA	RDOUS C	OMF	PONENT (For	mixture	or was	te only)			EHS	S			CAS	#	
-1		5 29					ACETAT				30	🗆 Yes		No 3	31	628	3-6	3-7	32
2	3		+				YL ACE				30	🗆 Yes		No 3	11	624	- 41	-9	32
3	20.	29	3	- MET	HYL B	507	YL ACE	TAT	2		30	🗆 Yes		No 3	1	/23	- 92	2-2	32
5	<u> </u>	 					<u></u>		<u>-</u>		30	☐ Yes			<u>'</u>				32
Hme	ore hezero		nents ar	e present at gre	eter then 1% by	welaht	ff non-carcinogenic	or 0 1% /	her sameles he	Heemino	30	☐ Yes							32
							PLACAP					in additiones	379963 07	papar cap	turing t	he require	d informet	ion.	
UN	DOT #	¢							33		Γ	N	FPA 70	4 HAZA	RD D	AMON	D	7	
				Refer to sh	hipping pap	oers c	or MSDS					FI	RE (REC	" <b>*</b> ```		00			
DO	T HAZ	ARD CL	.ASS	<u> </u>			·		34			HEALTI (BLUE)		V	Ø	ке • (YE	ACTIVE LLOW)		
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Revised 2/02 -- haz-inven2.doc

CHEMCENTRAL-L.A.



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# 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 vemilation, 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 Amvl Acetate Primary Amyl Acetate, Mixed Isomer						
PRODUCT NAME:	PRIMARY AMYL ACETATE, MIXED ISOMERS							
CHEMICAL NAME:	Primery Arriyl Acetero							
CHEMICAL FAMILY:	Esters							
FORMULA:	CH3COOC5H11 (mixed isomere)							
MOLECULAR WEIGHT:	130.19							
SYNONYMS:	None							
CAS # AND NAME:	See Section III, "Ingredients"							
· · · · · · · · · · · · · · · · · · ·	II. PHYSICAL DATA							
BOILING POINT, 750 mm H	lg: 146 C <b>294.8</b> F							
SPECIFIC GRAVITY(H20 =	1): 0.8757 AT 20/20 C							
FREEZING POINT:	(sets to glass) <-100.C (<-148 F)							
VAPOR PRESSURE AT 20'0	2: 4 mmHg AT 20 C							
	Copyright 1997 Union Carbide.	AFS) ()D (204) 744-2387						

UNION CARBIDE CORPORATION 39 Old Ridgebury Road, Danbury, CT 06817-0001

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CHEMCENTRAL-L.A.

2001 15:30 FAX 1 562 PRODUCT NAME: P	2 921 8294 CHEMCENTRAL-L.A. RIMARY AMYL ACETATE, MIXED ISOMERS	2003 PAGE
VAPOR DENSITY (AIR =	1): 4.5	······································
EVAPORATION RATE (But	cyl Acetate = 1): 0.42	
SOLUBILITY IN WATER by	/ wt: 0.2% AT 20 C	
APPEARANCE:	Transparent colorless	
ODOR:	Mild characteristic	
PHYSICAL STATE:	Líquid	
PERCENT VOLATILES (by	weight): 100	
	III. INGREDIENTS	
6 MATERIAL	CAS# EXPOSURE LIMIT	<u> </u>
5 Primery Arnyl	Acetate 628-63-7 See Section V	
5 2-Methyl Buty	Acetate 624-41-9 None established	
<0.1 3-Methylbutyl	Aceture 123-92-2 See Section V	
	IV. FIRE AND EXPLOSION HAZARD DATA	
LASH POINT:	101 F (38 C) Tag Closed Cup ASTM D 56	
	106 F (41 C) Tag Open Cup ASTM D 1310	
LAMMABLE LIMITS IN AIG 6 by volume:	R LOWER: 1.1 UPPER: 7.5	
XTINGUISHING 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.	
PECIAL FIRE FIGHTING	Use self-contained breathing apparatus and protective clothing.	

UNUSUAL FIRE AND EXPLOSION HAZARDS:

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This material may produce a floating fire hazard in extreme fire conditions.

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## PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

See "Other Precautions" In Section IX. V. HEALTH HAZARD DATA EXPOSURE LIMIT(S): Primary Amyl Acetete (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, nauses, 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 meterial suggests that overexposure is unlikely to aggravate existing medical conditions. ADDITIONAL TOXICITY INFORMATION: Exposure of pregnant rate to primary amyl acetate vepor at 1000 ppm and greater resulted in meternal 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 fatotoxicity 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.

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# 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 modicel 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 1	o avoid); Strong oxidizing agents. Nitric acid. Sodium hydroxide. Alkali metal hydroxides.
HAZARDOUS COMBUSTION (	DR DECOMPOSITION PRODUCTS: Burning can produce the following products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inheled; carbon dioxide in sufficient concentrations can act as an asphyxient.
HAZARDOUS POLYMERIZATI	ON: Will Not Ocour
CONDITIONS TO AVOID:	None known_
	VII. SPILL OR LEAK PROCEDURES
STEPS TO BE TAKEN IF MAT	ERIAL 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.
v	III. SPECIAL PROTECTION INFORMATION
RESPIRATORY PROTECTION:	Use self-contained breathing apparatus in high vapor concentrations.

CHEMCENTRAL-L.A.

Ø 006 PAGE 5

# PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

VENTILATION: General (mechanical) room vantilation 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: Monogoggies

#### 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 conditione.

Any use of this product in elevated-tamperature 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:

		UPPER BOUND	
CHEMICAL	CAS NUMBER	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 lovel 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:

UPPER BOUND

CHEMICAL

CAS NUMBER 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-Kn	w, Substance List (MSL) Hezerdous Substances and Extraordinarily	р. — <sup>1</sup>
	must be identified when present in products.	
Components present in this p	oduct at a level which could require reporting under the statute are:	1
Ĥ.	ZARDOUS SUBSTANCES ( => 1%)	
	UPPER BOUND	
CHEMICAL	CAS NUMBER CONCENTRATION %	
n-Pentvi 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 ere:

## PRODUCT NAME: PRIMARY AMYL ACETATE, MIXED ISOMERS

	HAZARDOUS SUBSTANCES ( => 1	%)
		UPPER BOUND
CHEMICAL	CAS NUMBER	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, gelvanized steel, copper and copper alloys.

Materials not to be used: Pólyvinyl 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 structurel integrity and proper system operation should be established. Inspection and maintenance procedures and testing of equipment should comply with NYS/DEC regulations Perts 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 gualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Date 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:** 

PRODUCT: 13741

Revisions to this MSDS occurred in Section V - HEALTH HAZARD DATA

F NUMBER: COOSTH

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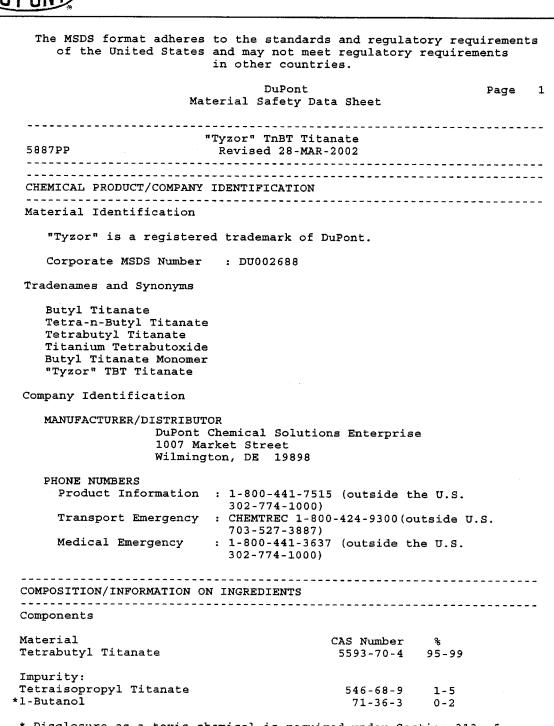
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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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	CONFIDENTIAL LOCA	TION		No 5	MAP# F	-1			6 0	GRID #		<u>้</u> า		7
Ε	PCRA				IEMICAL II						L	.2	<b></b>	<u> </u>
G						WAS		] Yes	8 7	RADE SE	SET	Yes	24	11
	1	YZOR	TNBT	TITAN	57×		- L	_ , es				nstructions	121 10	
C	OMMON NAME	9	AME							vn EHS Che	mical	Yes	No No	12
c	AS#		10 FIRE CODE	HAZARD CLASSES	(supplied by GG	FD)				f EHS is "Y	'es", all a	mounts must be	LBS	13
T	YPE (Check one liem only)		AT 6. MIXTUR		WASTE 14	RADIOA	CTIVE		ÊN	б 15	CUR	ES		16
PI					17 FED 1	IAZARD GORIES	a. Fi		] b. RE/		 □	PRESSURE RE		18
	heck one Kem only)		•		CATE	GOIGES	2 d. AC	UTE HEA			1	CHRONIC HEAL		
	ERAGE DAILY	15	9 MAXIMUM DAILY AMOUNT	40	20 AN				21	STAT	WAST	ECODE		22
UN	IITS . GALL	=	CUBIC FEET	23 DAYS ON SIT	-			24	LARGES	T CONTAI				25
-	*If EHS, amo	unt must be in pound	ds.		365		>				5	Gouf	ALL	
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		c. TANK	INSIDE BLDG	g. METAL CON		] I. BAG(S	)	0 P	LASTIC C	CONTAINE	R Ĺ	S. TOTE BIN		
STO	ORAGE PRESSURE			🔲 ь.	ABOVE AMBIEN		-	BELOWA						27
STO	ORAGE TEMPERATU	RE	a. AMBIENT	🗍 ь.	ABOVE AMBIEN	IT .	<u> </u>	BELOWA	MBIENT	(	] d. Ci	RYOGENIC		26
	%WT	HAZ	ARDOUS COM	PONENT (For	mixture or w	aste only)			EHS	S		CAS	S #	
1	95-99 28	TETRA	ABUT4L	TITANA	52		30	🛛 Yes		No 3	1	5593-	70-4	32
2	1-5 29	TETRA	ISOPROPY	L TIT	ANAT	٤	30	🛛 Yes		No 3	1	546-6	8-9	32
3	0-2-29	1- BU	TANOL				30	🗌 Yes		No 3	1	71-36	-3	32
4	29	-					30	🗋 Yes		No 3				32
5	29					·········	30	🛛 Yes			1			32
H mo	re hezerdous compone	unts are present at gr	reater than 1% by weigi		or 0.1% by weight			additional	sheets of	f paper cap	turing the	e required inform	tion.	
				FLAGA		URIVIATI	UN							
UN	DOT #	UN	1120		33				FPA 70 RE (REC		RD DI	MOND		
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	x	If FPCP	A, Please Sign	Hara	36							HEMICAL		
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\* 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.

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#### (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.

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#### ta Sneet

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(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.

DuPont Material Safety Data Sheet Page

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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

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work area.

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(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

pН Odor Form Color Specific Gravity

Boiling Point: 180-184 C (356-363 F) @ 10 mm Hg% Volatiles: Less than 2%Solubility in Water: Hydrolyzes : Neutral : Butyl alcohol : Liquid, Clear : Pale Yellow : 0.99 @ 25C (77F)

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                              DuPont
                                                          Page
                                                                6
                    Material Safety Data Sheet
     _____
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:
                              7,500 mg/kg in rats
      Oral LD50:
                              11 mg/L in rats (tested as 25%
      Inhalation 4 hour ALC:
                              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
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DuPont Material Safety Data Sheet

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(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

	DuPont	DuPont		
Material	Safety	Data	Sheet	

OTHER INFORMATION	
NFPA, NPCA-HMIS	
	: 3 : 2 : 0
Personal Protection rati conditions.	ng to be supplied by user depending on use
specific material design	I Safety Data Sheet relates only to the ated herein and does not relate to use in ar material or in any process.
Address : W	SDS Coordinator uPont Chemical Solutions Enterprise ilmington, DE 19898 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

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GARDEN GAOL

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

□ ADD       □ DELETE       ③ REVISED 1       Page	
3000035       035       ADVANCED CHEMISTRY FIELDNOLOGY, INC.         I PAGILITY INFORMATION         CHEMICAL LOCATION         COMPORTAL LOCATION         OPEN MATERIAL STORAGE         COMPORTAL LOCATION         IN CHEMICAL INFORMATION         COMPORTAL LOCATION         IN CHEMICAL INFORMATION         COMMON NAME         OPEN         COMMON NAME         DYE         COMMON NAME         A PURE         COMMON NAME         A PURE         COMMON NAME <td colsp<="" td=""></td>	
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EPECRA         II. CHEMICAL INFORMATION         II. CHEMICAL INFORMATION         CHEMICAL NAME         IRGA SPERSE BLUE 1614-UZ.         VWASTE       Yes       a       TRADE SECRET       Yes       a         COMMON NAME         DYE         CAS #       10       FIRE CODE HAZARD CLASSES (supplied by GGFD)         TYPE (Check doe lam only       a. PURE       D'S MATURE       c. WASTE       14       RADIOACTIVE       Yes       No       15         TYPE (Check doe lam only       a. PURE       D'S MATURE       c. WASTE       14       RADIOACTIVE       Yes       No       15       CURIES       16         PHYSICAL STATE       a. SOLID       C'LIQUID       c. GAS       17       FED HAZARD       a. REACTIVE       a. PRESSURE RELEASE       18         AVERAGE DALLY       19       MAXIMUM DALLY       20       ANNUAL WASTE MOUNT       a. CURRONC HEALTH       a. CHRONC HEALTH       a. CHRONC HEALTH       a. CHRONC HEALTH       a. CHRONC HEALTH       21       STATE WASTE CODE       22         ANNUAL WASTE MOUNT       A. SOLID DATAK       a. NUNLAL WASTE MOUNT       a.	
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IRGASPERSE BLVE 1614-UZ       INTER 1       Ves 2005         COMMON NAME       DYE       IEPCRA see instructions         CAS#       10       FIRE CODE HAZARD CLASSES (supplied by GGFD)       IEPCRA see instructions must be IS         TYPE (check one ken only)       a. PURE       TO       FIRE CODE HAZARD CLASSES (supplied by GGFD)       If EPS is "Yes", all amounts must be IS         TYPE (check one ken only)       a. PURE       To       FIRE CODE HAZARD CLASSES (supplied by GGFD)       If EPS is "Yes", all amounts must be IS         PHYSICAL STATE       a. SOLID       Do CLIQUID       c. WASTE       14       RADIDACTIVE       Yes       No       15       CURIES       16         PHYSICAL STATE       a. SOLID       Do CLIQUID       c. GAS       17       EED MAZARD       a. FIRE       b. REACTIVE       a. PRESSURE RELEASE       16         AVERAGE DAILY       19       MAXIMUM DAILY       5       20       ANNUL WASTE MOUNT       21       STATE WASTE CODE       22         UNITS       a. GALONS       b. CUBIC FEET       23       DAYS ON SITE       24       LARGEST CONTAINER       c. FRAL CAR         STORAGE CONTAINER       d. TONS       THENS anount must be Inpounds       d. TONS       THENS anount must be Inpounds       c. ANNUL CONTAINER       c. RALCAR       c.	
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Storage container       a. Aboveground must be in pounds.       a. Aboveground that       a. Above	
STORAGE CONTAINER          a. ABOVEGROUND TANK         b. UNDERGROUND TANK         b. UNDERGROUND TANK         c. TANK INSIDE BLDG         d. STEEL DRUM         d. STEEL DRUM         c. TANK INSIDE BLDG         d. STEEL DRUM         d. STEEL DRUM         d. STEEL DRUM         d. STEEL DRUM         d. AMBIENT         c. BELOW AMBIENT         c. BELOW AMBIENT         c. BELOW AMBIENT         d. CRYOGENIC         c. BELOW AMBIENT         d. CRYOGENIC         c. STORAGE TEMPERATURE         d. AMBIENT         f. AMBIENT         h. ABOVE AMBIENT         c. BELOW AMBIENT         d. CRYOGENIC         c. STORAGE TEMPERATURE         d. AMBIENT         f. ADD S SECLELT         c. AS #         c. TANK TO STEEL DRUM         f. FOR PRIETARY         DYE         c. TANK TO STEEL         c. TANK TO STEEL         c. TANK TO STEEL         c. TANK         c.	
STORAGE TEMPERATURE       I & ABOVE AMBIENT       I & BELOW AMBIENT       27         STORAGE TEMPERATURE       I & AMBIENT       I & ABOVE AMBIENT       I & BELOW AMBIENT       I & CRYOGENIC       28         WWT       HAZARDOUS COMPONENT (For mixture or waste only)       EHS       CAS #         1       I-10       29       PROPRIETARY DYE       30       I Yes       No       31       TRADE SECRET 32         2       I-10       29       PROPRIETARY DYE       30       I Yes       No       31       TRADE SECRET 32         3       1       29       PROPRIETARY DYE       30       I Yes       No       31       TRADE SECRET 32	
************************************	
1     1     1     0     29     PROPRIETARY DYE     30     □Yes     □NO     31     TRADE SECRET 32       2     1-10     29     PROPRIETARY DYE     30     □Yes     □NO     31     TRADE SECRET 32       3     1     1     1     1     1     1     1     1       1     1     1     1     1     1     1     1	
2 1-10 29 PROPRIETARY DYE 30 □Yes □NO 31 TRADE SECRET <sup>32</sup>	
3 60-70 29 PROPYLENE GLYCOL METHYL ETHER 30 1 Yes 1 No 31 107-98-2 32	
4 1-10 29 172-PROPANEDIOL 30 148 1NO 31 57-55-6 32	
5 10-20 29 WATER 30 Yes 10 No 31 7732-18-5 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 3092_ 33 NFPA 704 HAZARD DIAMOND Refer to shipping papers or MSDS FIRE (RED)	
DOT HAZARD CLASS 3 34 HEALTH + 2 C MELOW	
(BLUE)	
Refer to shipping papers or MSDS SPECIAL WHITE	
EPCRA I YES INO 35	
HAZARD W OX/W 37	

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### **Material Safety Data Sheet**

OSHA / ANSI Z400.1-2004 Compliant

MSDS date: 17-Apr-2006

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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	60-70 203-5-39-1
1,2-Propanediol	57-55-6	1-10 200 - 338-0

### **NON-HAZARDOUS COMPONENTS**

Components	CAS Number	Weight %
Water	7732-18-5	10-20 231-191-2

# 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.

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### For Industrial Use Only

# 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure Guidelines:

Exposure Summary:

Components	OSHA PEL	OSHA STEL	ACGIH TWA		Ciba/ Manufacturer IEL:
Propylene Glycol Methyl Ether 107-98-2		553 mg/m <sup>3</sup> 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

10. STABILITY AND REACTIVITY

Not determined

Not determined

45°C (113°F)

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/cm3 @ 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:	the determined
Upper	Not determined
Lower	Not determined

### Flash point: Test Method (for Flash Point):

Stability:

Stable.

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MSDS date:	17-Apr-2006	Product Name: IRGASPERSE BLUE 1614-U2
Conditions to	Avoid:	None known
Incompatibilit	y:	Strong oxidizing agents, strong acids, strong bases.
Hazardous De Products:	composition	No decomposition expected under normal storage conditions.
Possibility of Reactions:	Hazardous	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	Not determined	
Water		
Descriptory due	Not determined	
Proprietary dye		
Proprietary dye	Not determined	
107-98-2	(Rabbits) LD50 13 g/kg	· · · · · · · · · · · · · · · · · · ·
Propylene Glycol Methyl Ether	(*******) <b></b> ***	
57-55-6	Not determined	
1,2-Propanediol		

### Acute Inhalation Toxicity:

7732-18-5 Water	4700 ppm (0.5 hour) (Rats)
Proprietary dye	Not determined.
Proprietary dye	Not determined.
107-98-2	(Rats) 10000 ppm (5 hours)
Propylene Glycol Methyl Ether	May cause dizziness or headaches. Causes irritation to the respiratory tract.
57-55-6	Not determined.
1,2-Propanediol	

### Eye Irritation:

7732-18-5 Water	Not determined.	
Proprietary dye	Not determined.	
Proprietary dye	Not determined.	

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107-98-2 Propylene Glycol Methyl Ether	(Rabbits) Mild to moderate irritant.	
57-55-6 1,2-Propanediol	(Rabbits) Mild eye irritant.	

### Skin Irritation:

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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
57-55-6 1,2-Propanediol	Rat primary hepatocytes: Non-clastogenic 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.

### Product Name: IRGASPERSE BLUE 1614-U2

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57-55-6	Not determined
1,2-Propanediol	

### Teratogenicity:

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7732-18-5	Not determined.
Water	
	Not determined.
Proprietary dye	
	Not determined.
Proprietary dye	
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	Not determined.
1,2-Propanediol	

### 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	Not determined
Water	
	Not determined
Proprietary dye	
	Not determined
Proprietary dye	
107-98-2	Not determined
Propylene Glycol Methyl Ether	
57-55-6	Not determined
1,2-Propanediol	

### Subchronic Toxicity:

7732-18-5	Not determined
Water	
	Not determined
Proprietary dye	
	Not determined
Proprietary dye	
107-98-2	Repeated overexposure to 1-methoxy-2-propanol may cause liver and kidney
Propylene Glycol Methyl Ether	damage and delayed skeletal development of the fetus, based on animal studies.
57-55-6	Chronic exposure may produce central nervous system and kidney effects.
1,2-Propanediol	, , , , , , , , , , , , , , , , , , ,

Chronic toxicity:	
7732-18-5	Not determined
Water	

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### Product Name: IRGASPERSE BLUE 1614-U2

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:

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

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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: Ш 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: 111

## 15. REGULATORY INFORMATION

### **Federal Regulations**

**OSHA Hazardous Substance:** 

bstance: 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 SOCMI 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	Listed.		
57-55-6			

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**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	CERCLA Reportable
Propylene Glycol Methyl Ether	Hazardous Substances	Quantity
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.
	Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-To-Know:

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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 1.2-Propanediol	107-98-2	Listed.
	57-55-6	Listed.

### International Regulations

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.

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Revised 2/02 -- haz-inven2.doc



# Material Safety Data Sheet AC-® 502 Part B

SIN #834-100

MSDS No: 250210-01 Effective: 01/27/09 Supercedes: 09/14/05 Page: 1 of 6

### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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 HAZARD RATINGSHMISNFPAHealth2\*2Fire22Reactivity00\* = Chronic

ChemTrec Emergency 1 - 800 - 424 - 9300

2. COMPOSITION/INFORMATION ON INGREDIENTS		
COMMON NAME	CAS #	Approximate % (w/w)
4-Chlorobenzotrifluoride	98-56-6	50 - 60
Nitroethane	79-24-3	5 – 10
Non-hazardous and other ingredients below reportable levels	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 Explosive Limits: LEL (%) 0.9 Autoignition: 414°C Method: Tag Closed Cup UEL(%) 10.5

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Oxides of nitrogen (NO, NO<sub>2</sub>, ...) 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 Oral LD50 Vapor LC50 (4 hour) Dermal LD50	Rat Mouse Rat Rabbit	>6800 11,500 4479 >2700	mg/kg mg/kg mg/kg 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: (I) 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**

Paint

Weight (lb.)

Shipping Name

DOT Label..... Flammable Liquid Hazard Class...... 3 (IATA/49CFR) 3.3 (IMO) Packing Group.....: III

49 CFR IATA IMO Y Y Y

UN/NA ld Num...: UN 1263 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 INFORSIATION**

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
Non-hazardous trade secret ingredient(s)	Proprietary	Balance

California - California Proposition 65 - None

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 None



MSDS No: 250210-01 Effective: 01/27/09 Supercedes: 09/14/05 Page: 6 of 6

### **16. 0THER 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.

DISCCAIMER 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

THE DEPARTMENT	HAZARDOUS MATE	RIALS INVE	NTORY F	ORM FORM 3	]
	ELETE REVISED 1		Pag	e of	2
FACILITY ID# 3 0 0 3 5	38 BUSINESS NAME ADVANC	GD CHEMIS	TRY & TEC	HNOLOGY, INC.	3
	I. FACILITY INFO				
CHEMICAL LOCATION	Storeau Area				4
CONFIDENTIAL LOCATION EPCRA	Yes No 5 MAP#	١	6 GRID# /	2-6-7	7
	II. CHEMICAL INFO	RMATION			
CHEMICAL NAME AC-502 Po	A +~	WASTE 🗌 Yes	8 TRADE SECRE		1
COMMON NAME			9 An EHS Chemic	al 🗌 Yes 🗌 No 12	2
CAS# 10 FIF	RE CODE HAZARD CLASSES (supplied by GGFD)		"If EHS is "Yes",	all amounts must be LBS	
L'a PORE AJS.				CURIES 16	-
(Check one Ham only)	LIQUID C. GAS 17 FED HAZA CATEGOR	ES	-	] c. pressure release 18 <b>I.</b> Chronic health	
AVERAGE DAILY 19 MAXIMI AMOUNT AMOUN	UM DAILY 00 20 ANNUAL	WASTE AMOUNT	The second s	ASTE CODE 22	1
UNITS . GALLONS . b. CUBIC FEET	T 23 DAYS ON SITE 365 DA	24		20	1
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(Check all that apply)		BAG(S) 🗌 o Pi	LASS CONTAINER	C. RAIL CAR  S. TOTE BIN  L. OTHER	
				27	
				CRYOGENIC 28	
%WT HAZARDOUS	COMPONENT (For mixture or waste	nly)	EHS	CAS #	
120-25° Barium (	hromate	30 🗍 Yes	🗆 No 31	10294-40-3 32	
	ellosolve	30 🖸 Yes	🗌 No 31	111-76-2 32	
13/10-15 23 Solvent n	cotha (petroleum)	) <sup>30</sup> □ Yes	🗌 No 31	CA742-95-6 32	
4 29		30 🖸 Yes	🗌 No 31	32	
5 29 If more hezerdous components are present at prester then 1%	by weight if any employed as a diff human has	30 🗌 Yes	🗌 No 31	32	
If more hezardous components are present at greater than 1%	PLACARDING INFORM	reinogenic, attach additional	sheets of paper capturing	the required information.	
UNDOT # UN 1262 Refer to shipping p	2 33	NF FIR	PA 704 HAZARD I	DIAMOND	
DOT HAZARD CLASS <u>3 (JATA)</u> Refer to ship	FR49) 3.3 (IMD) <sup>34</sup>	HEALTH (BLUE) SPI		> (YELLOW)	
	35			OX/W <sup>17</sup>	
X If EPCRA, Please	Sign Here 36		NY COPIES OF RY FORM AS N		

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1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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# Material Safety Data Sheet AC-<sup>®</sup> 502 Part A

MSDS No: 350210-01 Effective: 01/27/09 Supercedes: 09/14/05 Page: 1 of 6

SIN #834-100

Product ID: AC-502 Part A Generic Description: Primer			
Product Use: Aircraft Coating	HAZAR	D RATIN	IGS
For information, contact:		HMIS	NFPA
Advanced Chemistry & Technology 7341 Anaconda Avenue	Health	3*	3
Garden Grove, CA 92841-2921 714 - 373 - 2837	Fire	2	2
114 - 575 - 2657	Reactivity	0	0
ChemTrec Emergency		* = CI	nronic
1 - 800 - 424 - 9300			

2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME Barium chromate Butyl Cellosolve Solvent naphtha (petroleum), Light aromatic Non-hazardous and other ingredients below reportable levels

### CAS # Approximate % (w/w) 10294-40-3 20 - 25 111-76-2 10 - 15 64742-95-6 10 - 15 Proprietary Balance

### 3.HAZARDS IDENTIFICATION

CARCINOGENICITY

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..

CARGINOGENICITY.	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 reuse.

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 Explosive Limits: LEL (%) 1 Autoignition: Not Determined Method: Setaflash Closed Cup UEL(%) 10

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.



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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 Butyl Cellosolve Solvent naphtha (petroleum), Light aromatic	0.5 25 Not	mg/M <sup>3</sup> ppm Available
OSHA - PEL Barium chromate Butyl Cellosolve Solvent naphtha (petroleum), Light aromatic	0.1 25 Not	mg/M <sup>3</sup> Ceiling ppm 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	VOČ:	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.



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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: (I) 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 Paint

DOT Label.....Flammable LiquidHazard Class.....3 (IATA/49CFR) 3.3 (IMO)Packing Group......III

49 CFR IATA IMO Y Y Y UN/NA Id Num UN 1263

UN/NA Id Num...: UN 1263 USPS Mailability: No

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

### **15. REGULATORY INFOR5IATION**

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 Cellosoive	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 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

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Material Safety Data Sheet AC-® 502 Part A

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CEPA - NPRI Barium chromate

Chromium compounds

### **16. 0THER INFORMATION**

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DISCCAIMER 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

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

			ADD			ID 1				Pag	e of		2
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Revised 2/02 -- haz-inven2.doc

#### Friday, June 01, 2007

Monday, December 04, 2006

660008 recid 5-30-7

### MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDETIFICATION 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. Breintag 4420 N. Harley Davidson Avenue 1405 Hwy Wauwatosa, WI 53225 Henderso

Breentag Mid-South Inc. 1405 Hwy 136 W Henderson, KY 42420 Brenntag Northeest, Inc. 81 West Huller Lana Reading, PA 19605

Brenntag Southeast, Inc. 2000 East Pettigrew Street Ourham, NC 27703 Breintag Southwest, Inc. 610 Fisher Road Loogview, IX 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. Friday, June 01, 2007

Monday, December 04, 2006

### 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:  $47^{\circ}$  C ( 116.60  $^{\circ}$  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 airbarne levels to acceptable levels.

### PERSONAL PROTECTIVE EQUIPMENT

Eyes:

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: 1.348cm<sup>3</sup>

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-Trifluorotoluen 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.	Greentog X12-South loc.	Brenntag Northeast, Inc.
4420 N. Harley Davidson Avenus	1405 Hwy 133 W	81 West Huller Lane
Wauwetosa, WI <b>5</b> 3225	Henderson, X7 42420	Reading, PA 19605
Brenntag Southeast, Inc.	Brenntag Sox thwast, Inc.	Brenntag Pacific, Inc.
2000 East Pettigrew Streat	610 Fishtler (Lisd	10747 Patterson Place
Durham, NC 27703	Longview, 14 (C3D)	Santa Fe Springs, CA 80670

This MSDS is provided as an information resource only. It should not be taken as a warranty or representation for which Brennteg assumes legal liability. While Breinnteg 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.

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# HAZARDOUS MATERIALS INVENTORY FORM

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# SIGMA-ALDRICH

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# Material Safety Data Sheet

Version 3.3 Revision Date 01/11/2008 Print Date 02/12/2008

Product name	Donnautabl	orido		
r rouuct name	Benzoyl chl	oride		
Product Number	: 259950			
Brand	: Sigma-Aldrich			
Company	: Sigma-Aldrich 3050 Spruce S SAINT LOUIS USA			
Telephone	: +1 800-325-58	32		
Fax	: +1 800-325-50	52		
Emergency Phone #	: (314) 776-655	5		
COMPOSITION/INFORMA	TION ON INGREDIEN	rs		
Formula Molecular Weight	: C7H5ClO : 140.57 g/mol			
CAS-No.	EC-No.	Index-No.	Concentration	
Benzoyl chloride				
98-88-4	202-710-8	607-012-00-0	-	
AZARDS IDENTIFICATIO	ON			
AZARDS IDENTIFICATION Emergency Overview OSHA Hazards Combustible Liqu Toxic by inhalation. Harmful by ingestion. Toxic by skin absorpti Corrosive Carcinogen	id			
Emergency Overview OSHA Hazards Combustible Liqu Toxic by inhalation. Harmful by ingestion. Toxic by skin absorpti Corrosive	id			
Emergency Overview OSHA Hazards Combustible Liqu Toxic by inhalation. Harmful by ingestion. Toxic by skin absorpti Corrosive Carcinogen HMIS Classification Health Hazard: 3 Chronic Health Haza Flammability: 2	id			

InhalationToxic if inhaled. Material is extremely destructive to the tissue of the mucous<br/>membranes and upper respiratory tract. May cause respiratory tract irritation.SkinToxic if absorbed through skin. Causes skin burns.EyesMay cause eye irritation. Causes eye burns.IngestionHarmful 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.

Sigma-Aldrich - 259950

#### Storage

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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/m3	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		95-1996 Adoption. fers to Appendix A Carcinogens.					

#### Personal protective equipment

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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.

Flash point	198 °C (388 °F) at 1,013 hPa (760 mmHg) 72 °C (162 °F) - closed cup	
Boiling point	73 - 74 °C (163 - 165 °F) at 15 hPa (11 mmHg)	
Melting point	-1 °C (30 °F)	
pН	2 at 1 g/l	
Safety data		
Colour	colourless	
Form	líquid	
Appearance		

#### ei . .

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/cm3
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 carcir	nogenic 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

Sigma-Aldrich - 259950

destructive to tissue of	and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, chortness of breath, Headache, Nausea, Vomiting, Lachrymation, Material is extremely the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our cal, physical, and toxicological properties have not been thoroughly investigated.							
Potential Health Effe	cts							
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 Eyes Ingestion	Skin loxic if absorbed through skin. Causes skin burns. Eyes May cause eye irritation. Causes eye burns.							
12. ECOLOGICAL INFORM	IATION							
Elimination information	on (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 or								
no data available								
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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 repo	orting requirements of SARA Ti	tle 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			
Benzoyl chloride	CAS-No. 98-88-4	Revision Date 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		Povision Date	
Benzoyl chloride	CAS-No. 98-88-4	Revision Date 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**

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#### **Further information**

Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. 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.

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Revised 2/02 -- haz-inven2.doc

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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-phrase(s) 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	<ul> <li>Take off all contaminated clothing immediately. After contact with skin, wash immediately with plenty of soap and water. Call a physician immediately.</li> </ul>



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### 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).



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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		



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## SAFETY DATA SHEET

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## 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		
pН	:	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

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## 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
2. Ecological information	
Further information	
Additional advice	: There is no data available for this product.
3. Disposal considerations	
Waste from residues	Dispose of in accordance with local regulations. Contact waste disposal services.
Contaminated packaging	<ul> <li>Do not re-use empty containers.</li> <li>Uncontrolled disposal or recycling of this packaging is not permitted and can be dangerous.</li> </ul>



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## 1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

14. Transport information		ł
ADR UN/ID No. Proper shipping name	:	<ul> <li>Class: 8         Packaging group: II         Classification Code: CF1         Labels:         Corrosive substance No. 8         Flammable liquid No. 3     </li> <li>Hazard identification No : 83</li> <li>UN 2920</li> <li>CORROSIVE LIQUID, FLAMMABLE, N.O.S. (1,1,3,3-Tetramethylguanidine)</li> </ul>
RID	:	Class: 8 Packaging group: II Classification Code: CF1 Labels: Corrosive substance No. 8
UN/ID No. Proper shipping name	:	Flammable liquid No. 3 Hazard identification No : 83 UN 2920 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
UN/ID No. Proper shipping name	:	Packing instruction (cargo aircraft): 812 UN 2920 Corrosive liquid, flammable, n.o.s. (1,1,3,3-Tetramethylguanidine)
IATA Passenger	:	Class: 8 Packaging group: II Labels: Corrosive substance No. 8
UN/ID No. Proper shipping name		Flammable liquid No. 3 Packing instruction (passenger aircraft): 808 UN 2920 Corrosive liquid, flammable, n.o.s. (1,1,3,3-Tetramethylguanidine)



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## 1,1,3,3-Tetramethylguanidine

Version: 12.11.2008 / EN

IN	/IDG-Code	de : Class: 8 Packaging group: II Labels:		Corrosive substance No. 8 Flammable liquid No. 3		
			EmS: F-E , S-C			
	UN/ID No. Proper shipping name	:	UN 2920 CORROSIVE LIQUID, FI (1,1,3,3-Tetramethylguar			
49	) CFR	:	Class: 8 Packaging group: II Labels:	Corrosive substance No. 8 Flammable liquid No. 3		
	UN/ID No. Proper shipping name	opper shipping name : Corrosive liquids		ids, flammable, n.o.s. methylguanidine)		
ΤC	)G	:	Class: 8 Packaging group: II Labels:	Corrosive substance No. 8 Flammable liquid No. 3		
	UN/ID No. Proper shipping name		UN 2920 CORROSIVE LIQUID, FL (1,1,3,3-Tetramethylguani			



#### 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) In case of contact with eyes, rinse immediately with plenty of S26: 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 : WGK 1: slightly water endangering

### (Germany)

#### 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
	1 Page of 2
FACILITY ID# 3 0 0 3 5 3 A	DVANCED CHEMISTRY & TECHNOLOGY, INC.
	LITY INFORMATION
CHEMICAL LOCATION MATERIAL STORAGE	AREA
CONFIDENTIAL LOCATION Yes No 5 MAR	
II. CHEM	ICAL INFORMATION
CHEMICAL NAME Polysulfide Sectort	WASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME AC-236 CLOSS C BOS	9 An EHS Chemical Yes No 12
CAS # 10 FIRE CODE HAZARD CLASSES (supp	If EHS is "Yes", all amounts must be LBS
	E 14 RADIOACTIVE TYes No 15 CURIES 16
PHYSICAL STATE Check one Many only	
AVERAGE DAILY 45 19 MAXIMUM DAILY 7,500	20 ANNUAL WASTE AMOUNT 21 STATE WASTE CODE 22
UNITS . GALLONS . CUBIC FEET 23 DAYS ON SITE	24 LARGEST CONTAINER 25
STORAGE CONTAINER	
Check all that apply b. UNDERGROUND TANK c. TANK INSIDE BLDG d STEEL DRUM h. CARBOY	UM I. FIBER DRUM In. GLASS CONTAINER IT & RAIL CAR
STORAGE PRESSURE	E AMBIENT C & BELOW AMBIENT 27
%WT HAZARDOUS COMPONENT (For mixt	
1 J-10 TODENE	$30 \square Yes \square No 31 \square OS - 88 - 3^{32}$
10-25 CLICION CORDONCE	$\frac{30}{30} \square Yes \square No 31 471-34-1 32$
10 CS CIMESTONE	
5 29 Titenium Dioxide	30 Exa Exa 5463-64-4 32
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1	
PLACARDIN	GINFORMATION
UNDOT # Not Regulated Refer to shipping papers or MSDS	- 33 NFPA 704 HAZARD DIAMOND FIRE (RED)
DOT HAZARD CLASS Refer to shipping papers or MSDS	- 34 HEALTH + I C REACTIVE (BLUE) (BLUE) (YELLOW) SPECIAL WHITE
	HAZARD OX/W 17
X If EPCRA, Please Sign Here	MAKE AS MANY COPIES OF CHEMICAL <sup>36</sup> INVENTORY FORM AS NEEDED
	INVENTORT FORM AS NEEDED

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SIN #834-100

Approximate % (w/w)

5 – 10

10 - 25

10 – 25

1 – 5

Balance

#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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			

CAS #

108 - 88 - 3

471 - 34 - 1

Proprietary

1317 - 65 - 3

13463 - 67 - 7

2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME Toluene Calcium carbonate Limestone Titanium Dioxide Non - hazardous and other ingredients below reportable levels

#### 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



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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......
 157F (69.4C)
 Method:.....
 Setaflash Closed Cup

 Explosive Lmts......
 LEL (%) Not Determined UEL (%) Not Determined
 Not Determined

 Autoignition.......
 Not Determined
 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



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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 <sup>3</sup> Total dust
	Toluene	50	ppm - Skin
	Limestone	10	mg/M <sup>3</sup> Total dust
	Titanium Dioxide	10	mg/M <sup>3</sup>
OSHA - PEL			-
	Calcium carbonate	5	mg/M <sup>3</sup> Resp. dust
	Toluene	100	ppm
	Limestone	5	mg/M <sup>3</sup> Resp. dust
	Titanium Dioxide	10	mg/M <sup>3</sup>
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
рН	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.



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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/M<sup>3</sup> 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 (Ib.)	Shipping Name Resin solution		49 CFR Y	IATA Y	IMO Y
DOT Label: Hazard Class:	•	UN/NA Id Num: USPS Mailability:		cable	

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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



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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

THE DEPARTMENT	HAZARDOUS	MATERIALS	INVENTOR	Y FORM	FORM 3
				Pag <b>e</b>	of 2
FACILITY ID# 3 0 3 5		SINESS NAME DVANCED C	HEMISTRY &	TECHNOLOG	SY, INC.3
CHEMICAL LOCATION	I. FACI	LITY INFORMATION			
MATERIA	HL STORAGE	AREA			4
CONFIDENTIAL LOCATION EPCRA	Yes XNO 5 MAI	P#	6 GRID	· (-2-76	7 1
	II. CHEM	ICAL INFORMATION			
CHEMICAL NAME POLYSULFIC	e Seclant	WASTE		E SECRET	■
AC-632	B Closs B	Base		S Chemical Ye	~
CAS # 1	0 FIRE CODE HAZARD CLASSES (supp	Hied by GGFD)		is "Yes", all amounts must	be LBS 13
TYPE (Check one liem cray)		E 14 RADIOACTIVE	Yes No	15 CURIES	16
PHYSICAL STATE	b. LIQUID C. GAS 17	CATEGORIES			
AVERAGE DAILY 2 19	MAXIMUM DAILY 250	20 ANNUAL WASTE AMOL		TATE WASTE CODE	EALTH 22
	IC FEET 23 DAYS ON SITE		24 LARGEST CO	NTAINER	
C. POUNDS d. TON "If EHS, amount must be in pounds.	\$ 36	5 DAYS		50 Gello	
(Check all that apply) . b. UNDERGE c. TANK INSI d STEEL DR	IDE BLDG Kg. METAL CONTAINE		m CYLINDER      n. GLASS CONTA      o PLASTIC CONT,      p. IN MACH OR EC	INER I r. RAIL CA	VAGON 26 AR
	AMBIENT b. ABOV		BELOW AMBIENT		27
	AMBIENT D. ABOV	· •	BELOW AMBIENT		28
	DOUS COMPONENT (For mixt	ure or waste only)	EHS	C,	AS #
$\frac{1}{2} \frac{1}{5} - \frac{1}{2} \frac{29}{2} \frac{1}{1} \frac{1}{2} \frac{1}{2} \frac{29}{1} \frac{1}{1} \frac{1}{1} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{1} \frac{1}{1} \frac{1}{2} \frac{1}{1} $		30		<sup>31</sup> BI7-	<u>65-3 °</u>
J-10 ATUMIN		30		31 7429-0	70-5 32
TI-S TODEN		30	🗆 Yes 🔲 No	31 108-8	88-3 32
$\frac{1}{5}$ $\frac{1-5}{29}$ litenic	om Doxide	30	□Yes □No	31 13463	-67-7 32
If more hezerdous components are present at greater	then 1% by weight if non-cercinomenic or 0.1	30	🗆 Yes 🔲 No	31	32
	PLACARDIN	G INFORMATION	ch additional sheets of paper	capturing the required infor	metion.
Refer to shipp	bb bing papers or MSDS	- 33	NFPA 704 HA FIRE (RED)	ZARD DIAMOND	
	shipping papers or MSDS	ون	(BLUE) The special special		
EPCRA 🛛 YES 🗍 NO		35	HAZARD	OX/W 3	
X If EPCRA, PI	lease Sign Here		E AS MANY COPIL		
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HAZARD RATINGS

HMIS

2\*

3

0

\* = Chronic

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Health

Reactivity

Fire

SIN #834-100

NFPA

2

2

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#### **1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

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

2. COMPOSITION/INFORMATION ON INGREDIENTS COMMON NAME CAS # Approximate % (w/w) Limestone 1317 - 65 - 3 10 - 207429 - 90 - 5 5 - 10Aluminum 1 – 5 Toluene 108 - 88 - 3 13463 - 67 - 7 Titanium Dioxide 1 - 5Non-hazardous and other ingredients below reportable levels 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



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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 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:	<b>、</b> ,	LEL(%) Not Established	UEL(%) Not Established	
Autoignition:	Not Available			

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 MEDIASMALL 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



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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 <sup>3</sup> Total dust
	Aluminum (Metal dust, as Al)	10	mg/M <sup>3</sup>
	Toluene	50	ppm
	Titanium Dioxide	10	mg/M <sup>3</sup>
OSHA	- PEL		
	Limestone	5	mg/M <sup>3</sup> Resp. dust
	Aluminum (Metal dust, as Al)	10	mg/M <sup>3</sup>
	Toluene	100 ppm	
	Titanium Dioxide	10	mg/M <sup>3</sup>
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.

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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/M<sup>3</sup> 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)		ng Name Solution, Flammable	49 CFR Y	IATA Y	IMO Y
DOT Packa	DOT Label: aging Group:	Flammable Liquid II	UN/NA ld: Hazard Class:	UN 1866 3(IATA/49CFR)	3.3 (IMO)

For a two-compartment container that contains Parts A and B. See the above information.



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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	<i>,</i>	
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

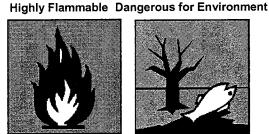


**Material Safety Data Sheet** AC-® 632 Class B Base

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**European Union:** Preparation classification: Harmful







Contains: 601-021-00-3 TOLUENE

Particular hazards associated with the preparation and safety recommendations:

- Highly flammable. R 11
- Harmful by inhalation and if swallowed. R20/22
- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R 52/53
- Possible risk of harm to the unborn child. R 63
- Keep container in a well-ventilated place. S 9
- S 16 Keep away from sources of ignition - no smoking.
- Avoid contact with eyes. S25
- Wear suitable protective clothing and gloves. S 36/37
- This material and its container must be disposed of as hazardous waste. S 60
- Avoid release to the environment. Refer to special instructions/Safety data sheets. S 61

#### **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**

HA	ZARDOUS MATE	RIALS INVE	ENTORY FO	FORM 3
			Page	of 2
FACILITY ID# 3 0 0 3 5			STRY & TEC	HNOLOGY, INC. 3
CHEMICAL LOCATION	I. FACILITY INFO	ORMATION		
MATERIAL ST	ORAGE ARE	<b>A</b>		4
CONFIDENTIAL LOCATION Yes	No 5 MAP#	1	6 GRID# (-	2->67 '
	II. CHEMICAL INF	ORMATION		
CHEMICAL NAME POly Sulfide See	lant	WASTE Yes	8 TRADE SECRET	Yes No 11
COMMON NAME AC-645 ÅC	celerctor		9 An EHS Chemica	al 🗌 Yes 🕅 No 12
	HAZARD CLASSES (supplied by GGFD)		"If EHS is "Yes",	all amounts must be LBS 13
TYPE (Check bie ison only)	E C. WASTE 14		No 15 C	URIES 16
PHYSICAL STATE a. SOLID A b. LIQUID	GAS 17 FED HAZ			c. PRESSURE RELEASE 18
and Andrew Market Mark			•	. CHRONIC HEALTH
AVERAGE DAILY AMOUNT O.2 19 MAXIMUM DAILY AMOUNT	50 20 ANNUA		21 STATE WA	STE CODE 22
UNITS . GALLONS b. CUBIC FEET C. POUNDS d. TONS If EHS, amount must be in pounds,	23 DAYS ON SITE 365 DA	24 YS		Gellon Drum
STORAGE CONTAINER          a. ABOVEGROUND TANK         b. UNDERGROUND TANK         c. TANK INSIDE BLDG         d STEEL DRUM         d STEEL DRUM	A METAL CONTAINER	FIBER DRUM n. BAG(S) o f	CYLINDER GLASS CONTAINER PLASTIC CONTAINER IN MACH OR EQUIP	q. TANK WAGON     26       r. RAIL CAR       s. TOTE BIN       l. OTHER
	b. ABOVE AMBIENT	🗌 a BELOWA	MBIENT	27
	b. ABOVE AMBIENT		MBIENT 🔲 d.	CRYOGENIC 28
	PONENT (For mixture or waste		EHS	CAS #
1 50-60° Mongonse 0	xide	30 🗌 Yes	□ No 31	1313-13-9 22
Joto Terphonyi n	ydrogeneted	30 🗌 Yes	🗆 No 31	61788-32-7 22
1) F 2 A Drenyl	- 1	30 🗍 Yes	□ No 31	26140-60-332
1 1-5 29 Jodiom hyd	roxide	30 🖸 Yes	□ No 31	1310-73-2 32
If more hezerdous components are present at greater than 1% by weigh	t if non-carcinogenic, or 0.1% by weight if c	30 Yes	□ No 31	32
	PLACARDING INFORM	MATION	sheets of paper capturing	the required information.
UNDOT # Refer to shipping papers DOT HAZARD CLASS	34			REACTIVE
Refer to shipping pa	apers or MSDS	SF		
EPCRA I YES NO	35	L		
X If EPCRA, Please Sign i	Here 36		NY COPIES OF	

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## Material Safety Data Sheet AC–645 Accelerator

MSDS No: 26452-04 Effective: 01/27/09 Supercedes: 11/18/05 Page: 1 of 5

CAS #

1313-13-9

61788-32-7

26140-60-3

1310-73-2

Proprietary

#### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

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

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME
Manganese oxide
Terphenyl, hydrogenated
Terphenyl
Sodium hydroxide
Non-hazardous and other incredients below reportable levels

#### 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:

Manganese oxide	ACGIH	IARC	NTP	OSHA
	No	No	No	No
Terphenyl, hydrogenated	No	No	No	No
Terphenyl	No	No	No	No
Sodium hydroxide	No	No	No	No

SIN# 834-100

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

Approximate % (w/w)

50 - 60

30 - 40

1 – 5

1 - 5

Balance



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

Explosive Lmts: LEL(%) Not Determined UEL(%) Not Determined Autoignition....: Not Determined Method.....: Not Applicable

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



## Material Safety Data Sheet AC–645 Accelerator

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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

EXPO: ACGIH	SURE GUIDELINES: I - TLV		
	Manganese oxide, Dusts and compounds, as Mn	5	mg/M <sup>3</sup>
	Manganese oxide, Fume	1	mg/M <sup>3</sup>
	Terphenyl, hydrogenated	0.5	ppm - Ceiling
	Terphenyl	0.53	ppm - Ceiling
	Sodium hydroxide	2	mg/M <sup>3</sup>
OSHA	- PEL		0
	Manganese oxide, Fume	1	mg/M <sup>3</sup>
	Terphenyl, hydrogenated	0.5	ppm
	Terphenyl	0.5	ppm - Ceiling
	Sodium hydroxide	2	mg/M <sup>3</sup>

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
рН	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

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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. Acids.

#### **11. TOXICITY INFORMATION**

#### COMPONENTS:

Manganese oxide: Eye, skin, and respiratory tract irritant. Can cause liver and kidney injury.

## Terphenyl, hydrogenated:

Oral LD50	Rat Mouse	17,500 12,500	mg/kg 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 Non-regulated		49 CFR Y	IATA Y	IMO
DOT Label.	Not applicable	UN/NA ld Num:	Not Applicable		



## Material Safety Data Sheet AC–645 Accelerator

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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

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## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

CEPARIT						
ADD		1		Page	of	:
FACILITY ID# 3 0 0 3 5	38	BUSINESS NAME ADVANCED	HEMISTRY	TEC	HNOLDEY	TAIC
		CILITY INFORMATION		1		
CHEMICAL LOCATION						4
MATERIA	L STORAGE	AREA				
CONFIDENTIAL LOCATION EPCRA	Yes X No 5 N	MAP # 1	6	GRID# (-7	2-767	7
	II. CHE	MICAL INFORMATIO	N			
CHEMICAL NAME POLUSULIJ	Sealant	WASTE	Yes 8	TRADE SECRET		No 11
COMMON NAME AC-1-1-5	Mage O '	Baac	9	• If EPCRA set In EHS Chemical		No 12
HC-665	FIRE CODE HAZARO CLASSES (SI	Upplied by GGED		f EHS is "Yes", a	il amounts must be LBS	
						13
TYPE (Check one item only)		STE 14 RADIOACTIVE	TYes X	io 15 Ci	IRIES	16
PHYSICAL STATE a. SOLID	b. LIQUID 🔲 c. GAS	17 FED HAZARD CATEGORIES	FIRE D. RE		c. PRESSURE RELEASE	18
And the second			ACUTE HEALTH		CHRONIC HEALTH	
	MOUNT 3,000	20 ANNUAL WASTE AMO	UNT 21	STATE WAS		22
UNITS . GALLONS . b. CUBIC	C FEET 23 DAYS ON SITE		24 LARGES	T CONTAINER		25
C. POUNDS d. TONS If EHS, amount must be in pounds.	3	65 DAYS			Gollon Dr	
						26
(Check all that apply)	E BLDG ANTAL CONTA		n. Glass C o Plastic (		r. RAIL CAR	
		. BOX(S)	P. IN MACH			
	MBIENT D. AB		C. BELOW AMBIENT			27
			c. BELOW AMBIENT	🗖 d.	CRYOGENIC	28
%WT HAZARD	OUS COMPONENT (For mi	xture or waste only)	EHS	5	CAS #	
10-2020 Colcium	n carbonate	30	🗆 Yes 🛛	No 31	471-34-1	32
2 5-10 29 Calciur	n chromot	e <sup>30</sup>	Yes D	No 31	13765-19-0	32
3 1-5 29 Toluene		30	□ Yes □ I	lo 31		32
1 (1) 20 (5) 1.	1	L 30			108-88-3	
5 29	im chrome				7789-06-2	32
H more hazardous components are present al greater ti	han 1% by weight if non-carcinogenic, or	0 1% by weight if com/or main and		0 31		32
	PLACARD	ING INFORMATION	ich Edditionel sheete of	peper cepturing t	he required information.	
<u> </u>	011			****		
UNDOT # UN Perfer to chippi	S66 Ing papers or MSDS	33			AMOND	
	hg papers of MSDS	, ,	FIRE (RED)	X2X	REACTIVE	
DOT HAZARD CLASS $3(I)$	ATA (CFR4G) 3:	<u>3(</u> Emo)	(BLUE) +	3X0>	(YELLOW)	
	shipping papers or MSDS		SPECIAL HAZARD		HITE 17	
EPCRA 🛛 YES 🗋 NO		35 L		~ 0	X/W "	
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						<b>/</b>

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#### **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

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

#### 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

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SIN #834-100

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

	CAS #	Approximate % (w/w)
	471 - 34 - 1	10 – 20
	13765 - 19 - 0	5 – 10
	108 - 88 - 3	1 – 5
	7789 - 06 - 2	<1
ortable levels	Proprietary	Balance



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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	RQ = 10 LB
Toluene	RQ = 1000 LB

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# Material Safety Data Sheet AC-<sup>®</sup> 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/M³ Total dust
Calcium chromate Chromium (VI) insoluble cpds., as Cr	1.0	µg/M <sup>3</sup>
Toluene	50	ppm
Strontium chromate	1.0	µg/M³
OSHA - PEL		-
Calcium carbonate	5	mg/M³ Resp. dust
Calcium chromate Chromium (VI) insoluble cpds., as Cr	5.0	µg/M³-Ceiling
Toluene	100	ppm
Strontium chromate Chromium (VI) insoluble cpds., as Cr	5.0	µg/M³-Ceiling
OSHA - STEL		
Toluene	150	ppm
Strontium chromate OSHA - PEL Calcium carbonate Calcium chromate Chromium (VI) insoluble cpds., as Cr Toluene Strontium chromate Chromium (VI) insoluble cpds., as Cr OSHA - STEL	1.0 5 5.0 100 5.0	μg/M <sup>3</sup> mg/M <sup>3</sup> Resp. dust μg/M <sup>3</sup> -Ceiling ppm μg/M <sup>3</sup> -Ceiling

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: Physical State:	Paste	Solubility:	
	Not Applicable Not Established	Vapor Pressure: Evaporation Rate:	
VOC Material: Specific Gravity:	48 g/L 0.4 lbs./gal. 1.46 g/cc	%Non-Vol(w/w): Wt(Ibs)/gal:	

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. 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 (Ib.)	Shipping Name		49 CFR	IATA	IMO
< 133	Resin solution		Y	Y	Y
≥ 133	RQ Resin solution (strontium chromate, calcium chroma		Y	Y	Y
DOT Label Hazard Class Packing Group:	3 (IATA/49CFR) 3.3 (IMO)	UN/NA Id Num USPS Mailabili		866	

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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.	50 - 00 - 0	< 0.01*
Formaldehyde Cancer Hazard.	50 - 00 - 0	< 0.01
* 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 3 Class D Division 2 Sub-division A 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

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

	DEPARTNE									
	C	ADD			1			Pa	ge a	of
F	ACILITY ID# 3	0 0	3 5	. 38 (	ADVANC	ED CI	HEMIST	24 - 76	CHNOLOG	Y, INC.
					CILITY INFO				•	
C	HEMICAL LOCATIO		D N		5-0-	~~				4
C	ONFIDENTIAL LOCA			STERIAL	MORA I	2E		GRID	<u></u>	
	CRA		, se					GROU	J5	7
C	EMICAL NAME			II. CHE	MICAL INFO					
Ĩ	/	ACET	IC ACID	, GLACI	AL	WASTE	Yes 8			- ET TRO 11
CC	MMON NAME		SAME	·			9	An EHS Chem	ical Yes	No 12
CA	S# / /)			E HAZARD CLASSES (si	upplied by GGFD)			*If EHS is *Yes	, all amounts must b	e LBS 13
		19-7								
	PE (Check one Kem only		· · · · · · · · · · · · · · · · · · ·			RADIOACTIVE		-	CURIES	16
(Ch	SICAL STATE	. <b>.</b> so		D 🗌 a GAS	17 FED HAZ				C PRESSURE R	
AVE	RAGE DAILY	<u></u>	19 MAXIMUM DAI	LY	20 ANNUA	L WASTE AMOU	ACUTE HEALTH	······		ALTH22
		<u>)</u> 0NS [	AMOUNT	23 DAYS ON SITE		LIGHE		GEST CONTAINE		
	🖾 c. POUI		d. TONS		65 D+	475	24 (34		5 ML BE	OTTLE 25
	RAGE CONTAINER		ABOVEGROUND TANK			VAT		NDER	g. TANK W	AGON 26
(Crit	ick all that apply)		JNDERGROUND TANK ANK INSIDE BLDG	I. NONMETALLIC	=	FIBER DRUM BAG(S)		S CONTAINER		
-	RAGE PRESSURE			h. CARBOY	[] ı	BOX(S)	□ p. IN M/	CH OR EQUIP		
<b></b>	RAGE TEMPERATU	RF	AMBIENT		SOVE AMBIENT		BELOW AMBI			27
	%WT		AZARDOUS COL		IOVE AMBIENT		BELOW AMBIE		d. CRYOGENIC	28
1	29				ixiore or waste	30		EHS	C/	AS #
2	29			·····			Yes	□ No 31		32
3	29				·····		☐ Yes	□ No 31		32
	29			·····		30	🛛 Yes	□ No 31		32
5						30	Yes	□ No 31		32
	29 hezardous compone	ints are present	at greater than 1% by we	ight if non-carcinogenic, or	A 196 ber unsinder H	30	🛛 Yes	□ No 31		32
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# **Material Safety Data Sheet**

Acetic Acid, Glacial, GR

EMD

Section 1. F	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 emergenc	<ul> <li>x</li> <li>x</li></ul>					

# Section 2. Hazards Identification

 $\langle \gamma \rangle$ 

Physical state	: Liquid. (Colorless.)
Odor	: Pungent.
OSHA/HCS status	<ul> <li>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</li> </ul>
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 effe	<u>xt</u> s
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)

Acetic Acid, Glacial, GF

AX0073

Page: 2/7

# Section 3. Composition/Information on Ingredients

**United States** 

Acetic Acid

Name

CAS number 64-19-7 100

% by Weight

#### 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 selfcontained 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 mouthto-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, CO 2).
Extinguishing media		
Suitable	:	Use dry chemical, CO <sub>2</sub> , 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.

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# 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	<ul> <li>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).</li> </ul>

# Section 8. Exposure Controls/Personal Protection

Product name	Exposure limits
United States	
Acetic Acid	ACGIH TLV (United States, 1/2006). STEL: 37 mg/m <sup>3</sup> 15 minute/minutes. Form: All forms STEL: 15 ppm 15 minute/minutes. Form: All forms TWA: 25 mg/m <sup>3</sup> 8 hour/hours. Form: All forms TWA: 10 ppm 8 hour/hours. Form: All forms NIOSH REL (United States, 12/2001). STEL: 37 mg/m <sup>3</sup> 15 minute/minutes. Form: All forms STEL: 15 ppm 15 minute/minutes. Form: All forms TWA: 25 mg/m <sup>3</sup> 10 hour/hours. Form: All forms TWA: 25 mg/m <sup>3</sup> 10 hour/hours. Form: All forms TWA: 10 ppm 10 hour/hours. Form: All forms TWA: 25 mg/m <sup>3</sup> 8 hour/hours. Form: All forms TWA: 10 ppm 8 hour/hours. Form: All forms
	TWA: 25 mg/m <sup>3</sup> 8 hour/hours. Form: All forms TWA: 10 ppm 8 hour/hours. Form: All forms
Consult local authorities f	or 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	<ul> <li>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.</li> <li>Recommended: splash goggles, face shield</li> </ul>

Acetic	Acid.	Glacial,	GF
Accilo		Qiaciai,	<b>U</b> n

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# **Section 8. Exposure Controls/Personal Protection**

Skin	<ul> <li>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.</li> <li>Body: Recommended: safety apron</li> </ul>
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	<ul> <li>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</li> </ul>
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	:	C2-H4-O2
<b>Boiling/condensation point</b>	:	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 <sub>2</sub> )
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.

#### Acetic Acid, Glacial, GF

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# Section 11. Toxicological Information

## Toxicity data

United States				
Product/ingredient name Acetic Acid	Test LD50 LD50 LD50 LDLo LDLo LC50	<u>Result</u> 3310 mg/kg 4960 mg/kg 1060 mg/kg 600 mg/kg 5620 ppm (1	Route Oral Oral Dermal Oral Oral Inhalation	<u>Species</u> Rat Mammal Mammal Rabbit Rabbit Muskrat
Chronic effects on humans	: Causes dai cornea, tee	hour/hours) mage to the following org th.	gans: upper respira	tory tract, skin, eye, lens or
Other toxic effects on humans	ingestion, o	nazardous in case of skir f inhalation (lung corrosi dous in case of inhalatior	ve).	e), of eye contact (corrosive), of
Specific effects				
Carcinogenic effects		ignificant effects or critic		
Mutagenic effects	: No known s	ignificant effects or critic	al hazards.	
Teratogenicity / Reproductive toxicity	: No known s	ignificant effects or critic	al hazards.	
<b>Sensitization</b>				
Ingestion	: May cause	burns to mouth, throat ar	nd stomach.	
Inhalation	: Irritating to	espiratory system.		
Eyes	: Corrosive to	eyes.		
Skin	: Corrosive to	the skin.		

# Section 12. Ecological Information

Ecotoxicity data		
United States		
Product/ingredient name	Species Period	Result
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, CO 2) and water.	
Toxicity of the products of biodegradation	: The products of degradation are less toxic than the product it	self.

# **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.
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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

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Acetic Acid, Glacial, GR

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## **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	11		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** 

Acetic Acid, Glacial, GF

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## Section 15. Regulatory Information

Hazard symbol/symbols	
Risk phrases	: R10- Flammable. R35- Causes severe burns.
Safety phrases	<ul> <li>S1/2- Keep locked up and out of the reach of children.</li> <li>S23- Do not breathe [***].</li> <li>S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</li> <li>S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</li> </ul>
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.)	: 2 Flammability Health 3 0 Instability Special

#### 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

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FACILITY ID# 3 (	035	38 BUSINE AD	SS NAME VANCED C	HEMISTRY	F TEC	HNOLOGY	·, INC. <sup>3</sup>
		I. FACILIT	Y INFORMATION				
CHEMICAL LOCATION	Materia	1 Storace	Area				4
CONFIDENTIAL LOCATI	ION Yes	No 5 MAP #	1	6		-2-67	7
		II. CHEMICA	AL INFORMATION	1			
CHEMICAL NAME	-130 PARTI	A	WASTE	Yes 8 1	RADE SECRE		No 11
COMMON NAME	GLACIAC	ACETIC ,	ACID	9 9	• If EPCRA s	ee instructions ai DYes	No 12
CAS# 64-19	10 505 0055	HAZARD CLASSES (supplied t			f EHS is "Yes",	all amounts must be L	BS13
TYPE (Check one item only)		E C. WASTE	14 RADIOACTIVE		o 15 C	URIES	16
PHYSICAL STATE (Check one kern only)		C. GAS 17	FED HAZARD A.			c. PRESSURE RELI	
1. Start Martin			D a.	ACUTE HEALTH		. CHRONIC HEALT	н
AVERAGE DAILY AMOUNT	O <sup>19</sup> MAXIMUM DAILY AMOUNT	100 20			STATE WA	STE CODE	22
UNITS . GALLON	s 🔲 d. TONS	23 DAYS ON SITE	DAYS	24 LARGES	T CONTAINER		25
If EHS, amount			<u> </u>			16 cont.	siner
(Check all that apply)	b. UNDERGROUND TANK	•. PLASTIC DRUM     1. NONMETALLIC DRUM     9. METAL CONTAINER	☐ i. VAT ☐ I. FIBER DRUM ☐ I. BAG(S)	m Cylinder Kn. Glass co	NTAINER	q. TANK WAGO	DN 26
STORAGE PRESSURE		h. CARBOY		p. IN MACH (	DR EQUIP	I. OTHER	
STORAGE TEMPERATURE				BELOW AMBIENT		CRYOGENIC	27
%WT	HAZARDOUS COM	PONENT (For mixture of		EHS		CAS	
1 29			30	🗆 Yes 🔲 I	No 31	0,40	32
2 29			30	□Yes □!	NO 31		32
3 29			30	□Yes □N	lo 31		32
4 29			30	🛛 Yes 🗌 N	lo 31		32
5 29			30	🗌 Yes 🔲 N		······	32
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	1112206		Г				
UNDOT #	UN 2789 Refer to shipping papers	or MSDS	33	NFPA 704 FIRE (RED)		DIAMOND	
DOT HAZARD CLAS	a	3		HEALTH	$\langle \rangle \rangle$		
	Refer to shipping pa			(BLUE) 7	$\langle \rangle \rangle$	WHITE	
EPCRA 🗆 YES [	ои Е	35	5 · L_	HAZARD		0X/W 17	]
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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

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 HAZARD RATINGSHMISNFPAHealth3\*3\*Fire22Reactivity00\* = Chronic

#### **ChemTrec Emergency**

1 - 800 - 424 - 9300

#### 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 SEVER 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

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SIN # 834-100



Material Safety Data Sheet AC-<sup>®</sup> 130 Part A

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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 devises.

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.

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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:

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.)	ipping Name etic Acid, Glacial	
	Acetic Acid Glacial	

DOT Label Acetic Acid, Glacial Hazard Class 8

Hazard Class 8

## **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

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49 CFR IATA IMO Y Y Y UN/NA Id Number UN2789 Packing Group II



## 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 # 64-19-7 Proprietary Approximate % (w/w) 100 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 D Division 2 Sub - division A Class F

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

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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## Material Safety Data Sheet AC-<sup>®</sup> 131 Part A (4-Part Kit)

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Health

Fire

Reactivity

#### **1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

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

#### 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

HAZARD RATINGS

HMIS

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#### 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 SEVER 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 trackt.

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

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SIN # 834-100

NFPA

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\* = Chronic



Material Safety Data Sheet AC-<sup>®</sup> 131 Part A (4-Part Kit)

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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 devises.

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.

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## Material Safety Data Sheet AC-<sup>®</sup> 131 Part A (4-Part Kit)

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#### 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 coloriess	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)		

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

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UN/NA Id Number UN2789

Packing Group II

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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:

|--|

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 Acetic Acid, Glacial
0 ( )	

DOT Label Acetic Acid, Glacial Hazard Class 8

#### **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 - Posetivity	,

N - Reactivity



# Material Safety Data Sheet AC-<sup>®</sup> 131 Part A (4-Part Kit)

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Y - Acute 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 Europe Canada Toxic Substance Control Act EINECS 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 # 64-19-7 Proprietary Approximate % (w/w) 100 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 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

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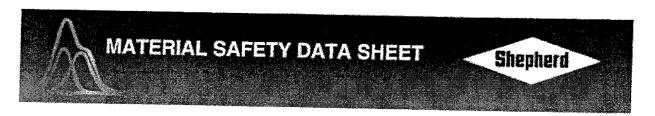
# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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2       4       29       SODIUM HYDROXIDE       30       Yes       No       31       1310-13-2         3       3       29       WATER       30       Yes       No       31       1732-18-5         4       29       30       Yes       No       31       7732-18-5         5       29       30       Yes       No       31       7732-18-5         Hore hezerdous 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         WATER         33         Sobium Hybroid if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.         PLACARDING INFORMATION         WATER         33         NFPA 704 HAZARD DIAMOND         FIRE (RED)         PLACARDING INFORMATION         UNDOT #         33         NFPA 704 HAZARD DIAMOND         FIRE (RED)         OF HEALTH       2         (BLUE) <td co<="" td=""><td></td><td>HAZARDOUS COMP</td><td>ONENT (For mixture or waste</td><td>only}</td><td>E</td><td>1S</td><td>CAS</td><td>#</td></td>	<td></td> <td>HAZARDOUS COMP</td> <td>ONENT (For mixture or waste</td> <td>only}</td> <td>E</td> <td>1S</td> <td>CAS</td> <td>#</td>		HAZARDOUS COMP	ONENT (For mixture or waste	only}	E	1S	CAS	#
3       3       29       WATER       30       Yes       No       31       7732-18-5         4       29       30       Yes       No       31       7732-18-5         4       29       30       Yes       No       31       7732-18-5         5       29       30       Yes       No       31         MATER       30       Yes       No       31         More hezardous 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 #         MEfer to shipping papers or MSDS         MEfer to shipping papers or MSDS         Mefer to shipping papers or MSDS         Additional sheets of paper capturing the required information.         PLACARDING INFORMATION         UNDOT #         MEfer to shipping papers or MSDS         Additional sheets of paper capturing the required information.         PLACARDING INFORMATION         WEACTIVE         MEACTIVE         Refer to shipping papers or MSDS		MANGANESE I	DIOXIDE	30	🗆 Yes 🛛	] No 31	1313-13-	9 32	
30     Yes     No     31     7732-18-5       4     29     30     Yes     No     31       5     29     30     Yes     No     31       If more hezardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, ettach additional sheets of paper capturing the required information.       PLACARDING INFORMATION       UNDOT #       33       Refer to shipping papers or MSDS       34       NFPA 704 HAZARD DIAMOND       FIRE (RED)       FIRE (RED)       REACTIVE       00       33       NFPA 704 HAZARD DIAMOND       FIRE (RED)       FIRE (RED)       REACTIVE       00       A Refer to shipping papers or MSDS       34       FIRE (RED)       WHITE       0X/W			LOX I'DE	30	🗌 Yes 🛛	] No 31	1310-73	- 2 32	
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Refer to shipping papers or MSDS	DOT HAZARD CL	ASS	34			2			
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If EPCRA, Please Sign Here 36 INVENTORY FORM AS NEEDED	······································	lf EPCRA, Please Sign H	lere 36						

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1. Product Name:	Manganese Dioxide, Activated High Moisture	Revision # 1
Company	: The Shepherd Color Company 4539 Dues Drive Cincinnati, Ohio 45246 U.S.A.	Date: 12-Jan-2000
	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	
	ŨĸĸĸŎĊĊĸĬĸŦĸŢĸĬĸŦŢŎĬĸĬŢŎŎĸŦŢĊĬĬĸŦŦŎŎĬĸŦĸŎŎĬĸĸŎĬĬĬĸĸŎŎĸĸŎŢŎĸĹĸŦŢŎĿĹĸŦŢŎĿĿŦŢŎĿĿŦŦŎĹĸĿŦŎŎĿĸŎŎĬĸĿŎŎĬŎĸĿŎĬŎĿĸŎŎŎĸĸŎŎ ŧ	ی زور دی <u>از ارسیامی و سرار از این مط</u> ار روی و میکرد.

# 2. Composition/Information on Ingredients

Ingredients: Manganese dioxide, activated Sodium Hydroxide Flake Water	CAS No: 1313-13-9 1310-73-2	EINECS 215-202-6 215-185-5	% Weight ( <u>Typical</u> ) >92 <3
	7732-18-5		3

Synonyms: MN0000W - MANGANESE DIOXIDE \* WET

As Regulated	OSHA PEL	ACGIH TLV	%Metal	Sara
(Related Exposure Limits)	(mg/m³)	(mg/m³)	(Typical)	313
Manganese compounds (as Mn)	5 Ceiling	0.2	58	Yes
Sodium hydroxide	2 Ceiling	2 Ceiling	<3	No

# 3. Hazards Identification

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EEC Risk Phrases: EEC Safety Phrases:	R 20/22 Harmful by inhalation and if swallowed. S(2-) 25
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.
and the second	

# 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
<u>مەلەر مەلەر مەلەر مەلەر مەلەر مەلەر مەلەر مەلەر بەر ئەتەر مەلەر مەلەر مەلەر مەلەر مەلەر بەر مەلەر بەر مەلەر بە</u>	

## 7. Handling and Storage

	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.
	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.
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# 9. Physical and Chemical Properties

Appearance: Odor: Melting point/melting range: Boiling point/boiling range: Flash point: Combustibility: Explosion limits:	Fine Black Powder No Odor Not Applicable Not Applicable Not Applicable None:
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
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## 11. Toxicological Information

Acute Toxicity

LD50/oral/rat: LD50/inhal/rat: Sensitizing: Primary skin irritation/rabbit: Primary mucous membrane irritation/rabbit' eyes:

14,900 mg/kg (5) Not Tested None expected No data available 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:

Page 4 of 5

s.

Eyes: No	Skin: No	Inhalation: Yes	Ingestion: Yes	
CARCINOG OSHA Regu	ENICITY: NTI lated:	P: No No	IARC Monograph	s: 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 uncontollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. (3)				
Medical Con	ditions Gener	ally Aggravated by		nervous system, circulatory kidneys and respiratory system.  )

## 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.S.	D.O.T. Classification:	Not Regulated
CANADA	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

MN0000W MSDS

\*\* 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. and the

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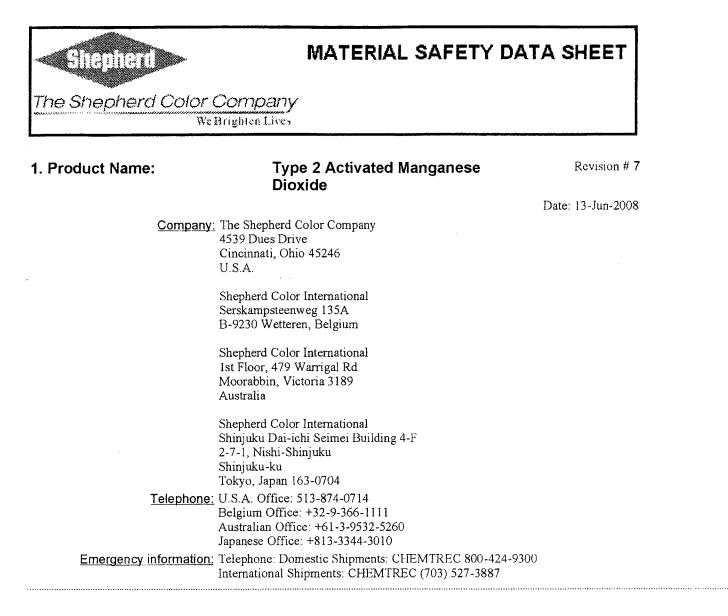
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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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				I. F.	ACILITY INF			<b>_</b>				
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				II. CH	IEMICAL IN	FORMATION						
		PEZAL	TIVATED	MANG		WASTE	Yes	8 TRAD	SECRET	Yes	TT No	11
	COMMON NAME		ANESE		102			9 An EH	S Chemica	L_] 103	□ No	12
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ST	ORAGE TEMPERATI		AMBIENT		ABOVE AMBIENT		BELOW AM	HENT	🗖 d.	CRYOGENIC		28
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	$0 - 2^{29}$	BARIUM			····-	30	C Yes	🗌 No	31	1304-2		32
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UN	IDOT #	Defects			33	ſ				DIAMOND	7	
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#### 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

			% Weight
Ingredients:	CAS No:	EINECS	(Typical)
Aluminum Oxide	1344-28-1		0-7
Barium Oxide	1304-28-5		0-2

### MN0002 MSDS

Page 2 of (

Iron (III) Oxide	1309-37-1 1313-13-9	215-168-2 215-202-6	0-5 65-100
Manganese dioxide, activated Silica Quartz	14808-60-7	213-202-0	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

lf 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<br/>NIOSH approved cartridges for Non-oil aerosols, N95, N99,<br/>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<br/>dust during processing.

As Regulated	OSHA PEL	ACGIH TLV	%Metal	Sara
(Related Exposure Limits)	( <u>mg/m³)</u>	<u>(mg/m³)</u>	(Typical)	<u>313</u>
Aluminum Oxide	5 Respirable 15 mg/m3 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 /%SiO2 +2 (Respirable) 0r 30/%SiO2+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): Viscosity: Other information: Not applicable Not applicable 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 crystabolite 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<br/>symptoms of chronic manganese poisoning includes: languor,<br/>sleepiness and weakness in the legs. A stolid masklike appearance<br/>of the face, emotional disturbances such as uncontrollable laughter<br/>and a spastic gait with tendency to fall in walking are findings in<br/>more advanced cases. (3)Medical Conditions Generally Aggravated byExposure:Central nervous system, circulatory

Central nervous system, circulatory system, kidneys and respiratory system. (NIOSH)

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### 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
CANADA	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

#### MN0002 MSDS

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.

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.

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# Honeywell

# Material Safety Data Sheet

### Manganese (IV) Oxide

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Manganese (IV) Oxide

1) -

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

· .				
CAS NUMBER	WEIGHT %			
1313-13-9	65-85			
1310-73-2	<=1 - <=2			
7732-18-5	2-5			
None	Balance			
	CAS NUMBER 1313-13-9 1310-73-2 7732-18-5			

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.

# Honeywell

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### 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.

INGREDIENT NAME	NTP STATUS	IARC STATUS	<u>OSHA LIST</u>
No incredients listed in this costion			

No ingredients listed in this section.

#### FIRST AID MEASURES 4.

- 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.
- Immediately flush eyes with large quantities of water for at least 15 minutes. Get medical attention. EYES:
- 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.

#### FIRE FIGHTING MEASURES 5.

#### 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.

# Honeywell

### MATERIAL SAFETY DATA SHEET Manganese (IV) Oxide

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Manganese oxide	5 mg/m <sup>3</sup> TWA	3 mg/m <sup>3</sup> STEL	None
	(as Mn dust)	(as Mn fume)	
	1 mg/m³ TWA		
	(as Mn fume)		
	3 mg/m <sup>3</sup> STEL		
	(as Mn fume)		
Sodium hydroxide	2 mg/m <sup>3</sup> Ceiling	2 mg/m <sup>3</sup> Ceiling	None

= 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 <sub>2</sub>	
ODOR:	Odorless.	
SPECIFIC GRAVITY (water = 1.0):	3.9-5.0 gms/cm3 @ 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 f	lammability data are found in Section 5.)	

(Flash point method and additional flammability a are iouliu

#### **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

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#### **11. TOXICOLOGICAL INFORMATION**

#### IMMEDIATE (ACUTE) EFFECTS:

LD<sub>50</sub> (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

#### <u>RCRA</u>

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: N US DOT HAZARD CLASS: N

Not regulated 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.

# Honeywell

### 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.

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
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.

#### INGREDIENT NAME Manganese oxide

COMMENT Manganasa compour

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.

#### INGREDIENT NAME

WEIGHT % COMMENT

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

# Honeywell

### MATERIAL SAFETY DATA SHEET Manganese (IV) Oxide

Section 2: Modify composition information

OTHER INFORMATION: None.

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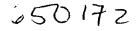
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### HAZARDOUS MATERIALS INVENTORY FORM

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#### **INNOVATIVE POLYMER SYSTEM5, INC.**

8530 Milliken Avenue Rancho Cucamonga, CA 91730 TEL 909-941-4999 FAX 909-941-4944

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 Diisoeyanate
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
* Tay manufit make mank in manufactory of the state of the state		

\* Ingredients not precisely identified are proprietary or not hazardous. Values are not product specifications.

#### II. 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.

innovative polymer systems inc. + 8530 Milliken Ave, Rancho Cucamonga California 91730 + tel (909)941-4999 + fax (909)941-4944

#### Material Safety Data Sheet continued (R "A")

#### 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. Can cause skin irritation, which may include the following: reddening, swelling, rash, scaling, and blistering. Skin: 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): TUV is ,005 PPM TWA Permissible Exposure Limit (OSHA): PEL is .02 PPM

#### VI. Emergency & First Aid Procedures

Flush with clean, lukewarm water at low pressure for at least 15 minutes, occasionally lifting eyelids. Consult a Eye contact: 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. No adverse effects anticipated by this route of exposure incidental to proper industrial handling. Ingestion: 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

Eve 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 acrosol 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.

Safety showers and eye wash stations should be provided in all work areas. All employees should be properly Other: trained.

innovative polymer systems inc. + 8530 Müliken Ave. Rancho Cucamonga California 91730 + tel (909)941-4999 + fax (909)941-4944

#### 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 oldry, 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 scaled 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: Freight Class Bulk: Freight Class Package: Product Label: DOT (HM-181) (Domestic Surface) IMO/IMDG Code (OCEAN) 4.4 - Diphenylmethane Diisocyanate 4.4 - Diphenylmethane Diisocyanate Chemicals, NOI (Isocyanate), NMFC 60000 Product Label Established Hazard Class or Division: Non-regulated 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

Page 3

RDEN GROUP

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### HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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Revised 2/02 -- haz-inven2.doc

**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

24 HR. EMERGENCY TELEPHONE NUMBERS

Durez Corporation 46820 Magellan Drive Suite C Novi MI 48377 Service Number: 1-800-699-0169 Alternate Customer Service: www.durez.com

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

**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.

**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

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 selfcontained 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	Supp	lierOEL
Chemical Name		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ррт	mg/m <sup>3</sup>
	TWA	0.75 ppm	NL	NL ppm	NL	NL	NL
Formaldehyde	STEL	2 ppm	NL	C 0.3 ppm <sup>[1]</sup>	C 0.37 <sup>[1]</sup>	NL	NL
OSHA TABLE COMMENTS: 1. C = Ceiling	, <b>, , , , , , , , , , , , , , , , , , </b>		<del></del>	<b>4. ann an 18 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9</b>	<u> </u>		·

Derez Corporation	Date Issued: 04/17/2006
Durez Canada Company, LTD.	MSDS No: M23539
• •	Date-Revised: 10/26/2007
SumiDurez Canada GP	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 contaiminants 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

**Durcz** Corporation

Durcz 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	emical Name ORAL LD <sub>50</sub> (rat)		INHALATION LC <sub>50</sub> (rat)	
Formaldehyde	100 mg/kg	270 μL/kg	454 mg/m3/4H 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

- ...

**Durez** Corporation

Durez Canada Company, LTD.

Date Issued: 04/17/2006 MSDS No: M23539 Date-Revised: 10/26/2007 Revision No: 3

SumiDurez Canada GP

Chemical Name	NTP Status	IARC Status	<b>OSHA</b> Status	Other
Formaldehyde	Reasonably Anticipated To Be A Carcinogen (Possible Select Carcinogen)	Monograph 62, 1995 (Group 2A (probably carcenogenic 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 - Ecotoxcity - 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

**Durez** Corporation

Durez Canada Company, LTD.

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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

**Durez** Corporation

Durez Canada Company, LTD.

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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	IJ	PA	RI
in the second	Formaldehyde	50-00-0	Yes	Yes	Yes	Yes	Yes	Yes
								and the second s

**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

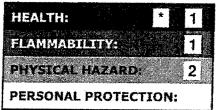
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Date Issued: 04/17/2006 MSDS No: M23539 Date-Revised: 10/26/2007 Revision No: 3

#### HMIS RATING



#### 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.

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### HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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ł	CONFIDENTIAL LOC		1.00			5 MAP #	<u>mar</u>	1		6 GRI	D#	~		7
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				<i>a</i>				1	Yes	8 TRA	DE SECRE	T 🗌 Y	No	11
		ER 3	31	EPO)	XY R	ESIL	)					ee instructions		
	COMMON NAME	EPC	NX4	RE	SIN						HS Chemic			12
F	CAS# 2508	5-99-	8 10	FIRE CODE	HAZARD CLASS	ES (supplied	by GGFD)	······································		[ •K EI	IS is "Yes",	ali amounts musi	be LBS	13
- H-	TYPE (Check one tem on			 b. Mixtur	F 🗖	c. WASTE	14	RADIOACTIVE	Yes	No	15 0	URIES		16
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EP	CRA 🗆 YES					-	35			ZARD 🕈		OX /W	17	
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Revised 2/02 -- haz-inven2.doc



### Material Safety Data Sheet

The Dow Chemical Company

Product Name DER\* 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

DER 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. Local Emergency Contact

989-636-4400 989-636-4400

### 2. Hazards Identification

Emergency Overview Color: White to yellow Physical State Liquid Odor: Mild

Hazards of product:

WARNINGI 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 Comeal injury is unlikely

Skin Contact Prolonged or repeated contact may cause skin in tation

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

Page 1 of 8

ingestion. Very low toxicity if swallowed. Haimful 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 (DGEBPA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBPA 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 DGEBPA is carcinogenic.

### 3. Composition Information

Component ;	CAS #	Атоилт
Reaction product Bisphenol A-(epichlorohydnn), 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<sup>•</sup> Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam Do not use direct water stream May spread fire. Alcohoi 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 nsing 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.

Page 2 of 8

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Product Name: D E R 1 331 EPOXY RESIN

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Issue Date 08/29/2006

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 scap and hot water. Collect in suitable and property 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

#### Handling and Storage

#### Handling

7.

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 withinStorage temperature24 Months2 - 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 property. Items which cannot be decontaminated, such as shoes, belts and waterbands, should be removed and disposed of property.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barner materials include. Butyl rubber: Ethyl vinyl alcohol laminate ("EVAL"). Nitrile Neoprene: Polyvinyl chlonde ("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, dextently, thermal protection), potential body.

Page 3 of 8

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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 Cher	nical Properties
Physical State	Liquid
Color	White to yellow
Odor	Mild -
Flash Point - Closed Cup	252 °C (486 °F) PMCC, ASTM D93
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 (H2O = 1)	1 16 Literature
Liquid Density	1 156 - 1 166 g/cm3 @ 25 °C ASTM D4052
Freezing Point	Not Determined
Melting Point	Not Determined
Solubility in Water (by	Insoluble
weight)	•
рН :	Not Determined
Dynamic Viscosity	11,000 - 13,500 mPa s @ 25 °C ASTM D445

#### 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 Material's 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 polymenzation 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. Toxicolog	ical Information				
Acute Toxicity Ingestion		•		, ,	
			Page	4 of 8	

: 4

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 (DGEBPA) Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBPA 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 DGEBPA is carcinogenic.

Developmental Toxicity

Resins based on the diglycidyl ether of bisphenol A (DGEBPA) 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-lite		Method
6 69E-11 cm3/s	1 92 h		Estimated
OECD Biodegradation Tests. Biodegradation		ire Time	Method
12 %	28 d		OECD 302B Test
Biological oxygen demand (E BOD 5	BOD 10	BOD 20	BOD 28
		<25%	
Theoretical Oxygen Demand: ECOTOXICITY Material is moderately toxic to a mg/L in most sensitive species	iquatic organism	is on an acute basis	(LC50/EC50 between 1 a

material's water solubility

#### Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), 96 h 3 1 mg/l Aquatic Invertebrate Acute Toxicity

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Toxicity to Micro	Daphnia magna, 48 h, immobilization o-organisms irowth inhibition, 18 h > 42 6 mg/l Species Test Type	14-17mg/l Endpoint	Exposure Time
Chronic Chronic Toxicity Value ChV Value mg/l		. • •	
0 55 mg/l	.water flea Daphnia magna	number of offspring	21 d
13. Disposa	al Considerations	•	
disposal practices regulations Regi applicable laws at THE MANAGEME OR USING THIS PRODUCT AS SI Composition Infor include sending to to its customers, f companies and of manage used dru 832-1556 (U S ), o	INTO ANY SEWERS, ON THE GROUP s must be in compliance with all Federa ulations may vary in different locations re the responsibility solely of the waste ENT PRACTICES OR MANUFACTURI MATERIAL THE INFORMATION PRI HIPPED IN ITS INTENDED CONDITIO rmation FOR UNUSED & UNCONTAN to a licensed, permitted Incinerator or of Dow can provide names of information ther facilities which recycle, reprocess ims Telephone Dow's Customer Inform or 1-800-331-6451 (Canada) for further present information	al, State/Provincial a Waste characteriz generator DOW H ING PROCESSES C ESENTED HERE PI DN AS DESCRIBED MINATED PRODUC other thermal destru resources to help id or manage chemica mation Group at 1-8	nd local laws and ations and compliance w AS NO CONTROL OVE DF PARTIES HANDLING ERTAINS ONLY TO THE IN MSDS SECTION T, the preferred options ction device As a servic entify waste manageme is or plastics, and that
DOT Bulk NOT REGULATE			
I IMDG	о <sup>†</sup> ``		
NOT REGULATE			
ICAO/IATA NOT REGULATE This information is requirements/infoi obtained through a	5 not intended to convey all specific reg rmation relating to this product Addition an authonzed sales or customer servic nization to follow all applicable laws, reg	onal transportation s te representative It	ystem information can b is the responsibility of th
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#### 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
11	1	i	2

Recommended Uses and Restrictions

Used in applications such as Adhesive Casting Tcoling 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

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Page 8 of 8

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document

Leaend

Not available
Weight/Weight
Occupational Exposure Limit
Short Term Exposure Limit
Time Weighted Average
American Conference of Governmental Industrial Hygienists, Inc
Dow Industrial Hygiene Guideline
Workplace Environmental Exposure Level
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. Howaver, 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)SDS, we are not and cannot be responsible for (M)SDS obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or it you are not sure that the (M)SDS you have is current, please contact us for the most current version.

HAZARDOUS MATERIALS INVENTORY FORM
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FORM 3

ADD DELETE REVISED 1 Page of	<sup>2</sup>
30 035 ADVANCED CHEMISTRY & TECHNOLOGY, I	NC.3
I. FACILITY INFORMATION	
CHEMICAL LOCATION	4
CONFIDENTIAL LOCATION Yes No 5 MAP # 6 GRID # 7	7
II. CHEMICAL INFORMATION	
CHEMICAL NAME IPS IDDO SERIES WASTE VOS 8 TRADE SECRET VOS	<b>16</b> 11
* # EPCRA see instructions	
POLYETHER POLYOL ** TEHS is "Yes", all amounts must be LBS	lo 12
CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD)	13
TYPE (Check one Kern only) . a. PURE A b. MIXTURE . c. WASTE 14 RADIOACTIVE Yes AND 15 CURIES	16
PHYSICAL STATE	18
AVERAGE DAILY 19 MAXIMUM DAILY 20 ANNUAL WASTE AMOUNT 21 STATE WASTE CODE	22
UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE 24 LARGEST CONTAINER C. POUNDS d. TONS 365 DAYS PT CAN	25
STORAGE CONTAINER	26
STORAGE PRESSURE	27
STORAGE TEMPERATURE AMBIENT D. ABOVE AMBIENT C. BELOW AMBIENT d. CRYOGENIC	26
%WT HAZARDOUS COMPONENT (For mixture or waste only) EHS CAS #	
1 96 29 HYDROXYL TERMINATED POLYUL 30 DYes DNO 31 9082-00-	2 32
2 22 29 TERTIARY AMINE 30 DYes DNO 31 N.E.	32
3 29 30 🗋 Yes 🗋 No 31	32
4 29 30 Yes No 31	32
5 29 30 🗌 Yes 🗌 No 31	32
If more hezardous 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 #	
DOT HAZARD CLASS 34 HEALTH + 1 D + (YELLOW)	
Refer to shipping papers or MSDS SPECIAL WHITE	
X MAKE AS MANY COPIES OF CHEMICAL	
If EPCRA, Please Sign Here 36 INVENTORY FORM AS NEEDED	

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#### **INNOVATIVE POLYMER SYSTEMS, INC.**

8530 Milliken Avenue Rancho Cucamonga, CA 91730 TEL 909-941-4999 FAX 909-941-4944 www.jespotymer.com

#### **Material Safety Data Sheet**

Code: **R "B"** Issue date: 3-1-96 Updated: 8/3/07

	Ī	<u>Product</u>	<u>Identification -</u>	Rigid "B"	Component
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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:	Арргох. %	Current TLV/PEL
Hydroxyl Terminated Poly (Oxyalkylene)	96	N.E.
Polyether Cas# 9082-00-2		
Tertiary Amine Bearing Compounds	<2	N.E.
Cas# 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.

innovative polymer systems inc. • 8530 Milliken Ave. Rancho Cucamonga California 91730 • tel (909)941-4999 • fax (909)941-4944

Material Safety Data Sheet continued (R "B")

#### 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): Permissible Exposure Limit (OSHA):

Suspected Carcinogenic:

Federal OSHA: CAL OSHA: NTP: IARC: Medical conditions aggravated by exposure: No TLV has been established for this product as a system. Same as above.

Not regulated. Not regulated. Not listed, Not listed. No data available.

#### VI. Emergency & First Aid Procedures

Plush with clean, lukewarm water at low pressure for at least 15 minutes, occasionally lifting eyelids. Consult a Eve contact: 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.

This product has demonstrated no observable effects at room temperature, however, it is highly **Respiratory Protection:** 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.

Safety showers and eye wash stations should be provided in all work areas. All employees should be properly Other: trained.

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## Material Safety Data Sheet continued (R "B")

## VIII. Reactivity Data

Stability: Polymerization: Incompatibility (materials to avoid): Hazardous Decomposition Products:

Stable. Will not occur. Avoid contact with isocyanates and other substances that react with hydroxyl groups. Aliphatic fragments, CO, NH3, CO2.

## 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 oildry, 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.) ω 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.

## XL. Shipping Data

Technical Shipping Name: Dot Hazard Classification: Freight Class Bulk: Freight Class Package: Product Label: Place Cards Required: HMIS:

Polyether Polyol Blend Non-regulated Polypropylene Glycol "B" Component Polyol None 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.

innovative polymer systems inc. • 8530 Milliken Ave. Rancho Cucamonga California 91730 • tel (909)941-4999 • fax (909)941-4944

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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Revised 2/02 -- haz-inven2.doc

 ADVANCED ADHESIVE SYSTEMS
 681 N. Mountain Rd, Newington, CT 06111, 860 953 4100

## MATERIAL SAFETY DATA SHEET

## I. PRODUCT NAME JB1110B EPOXY HARDNER

## **SECTION I: GENERAL**

Manufacturer:

Advanced Adhesive Systems 681 North Mountain Rd Newington, CT 06111

Emergency Phone Numbers: Chemical Family:

800 255 3924 CHEM-TEL 24 HR Polyamide/amine-Mercaptan Blend

## **SECTION II: COMPOSITION**

CHEMICAL NAME	<u>CAS #</u>	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 sever eye irritation and permanent damage
Skin Contact:	May produce severe skin irritation and burns. May cause skin sensitizationIngestion: Moderately toxic. Loss of consciousness may occur. Nausea, vomiting, dizziness, and drowsiness may occur
Special Health Effects: Chronic Health Effects:	No additional medical information found 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 – FIRS	ST 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

## Est. HMIS:

# Fire: 1

Health: 3

React: 1
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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 (CO2) 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. Use cautious judgment when cleaning up large spills. Shut off source of leak if Spill Management: 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 Proper disposal should be evaluated based on regulatory status of this material Disposal: (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

ADVANCED ADHESIVE SYSTEMS
 681 N. Mountain Rd, Newington, CT 06111
 860 953 4100

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 shieldsSkin Protection:Use protective clothing that is chemical resistant to this material. Selection of<br/>protective clothing depends on potential exposure conditions and may include<br/>gloves, boots, suits and other items. The selection(s) should take into account<br/>such factors as job task, type of exposure and durability requirements.RespiratoryIf engineering controls do not maintain airborne concentrations to a level that is<br/>adequate to protect worker health, an approved respirator must be worn.<br/>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 polymerizationwill not occurConditions 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

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ADVANCED ADHESIVE SYSTEMS JB1110B Hardner 11/19/03 PAGE 5 681 N. Mountain Rd, Newington, CT 06111 860 953 4100

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# HAZARDOUS MATERIALS INVENTORY FORM

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## Nuosperse fa 192

Page: 1/5 Material Safety Data Sheet acc. to ISO/DIS 11014 Reviewed on: 07/15/2002 Printing date: 02/06/2003 1 Identification of substance - Froduct details · Trade name: NUOSPERSE PA 192 · Application of the substance / the preparation Emulsifier Disponsing agent, Dispersant Manufacturer/Supplier; Sacol Servo BV Langestraat 167 7491 AE P.O.Box 1 7490 AA DELDEN - The Netherlands tel: +31/74/3775000 fax: +31/74/3775075 · Information department: QA/SEE Contract: Mr. Postma Tel: +31/76/3775303 or /3775307 Fax: +31/74/3775085 2 Composition/Data on components · chemical characterization; CAS No. Description: 59412-53-3 nonylphenol, branched, ethoxylated, phosphated · Identification humber(s): - SINECS Number: Polymer 3 Magards identification · Hezard description: Xi Irritant Information pertaining to particular dangers for man and environment R 38 Trritating to skin. R 41 Risk of serious damage to eyes. R 52/53 Marmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment - Clappification system • MPPA-Ratings for UBA Health = 0 Fire = 1 . Reactivity = 0 A 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 sys contact Rince opened eye for several minutes under running water. Then consult a doctor. - After swallowing If symptoms persist concult doctor. \_\_\_\_ 5 Fire fighting measures - Suitable extinguishing agenta Water sprey. CO2, extinguishing powder, foam. • Protective equipment: Wear fully protective suit. USA

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## NUOSPERSE FA 192

Faye: 2/5 Material Safety Data Sheet acc. to ISO/DIS 11014 Reviewed on: 07/15/2002 Printing date: 02/06/2003 Trade name: BUOSPERSE VA 192 -----6 Accidental release measures Derson-related safety predautions: Wear protective equipment. Norp unprotected persons away.
Measures for environmental protection: Inform respective authorities in case of seepage into water course or inform respective authorities in case of seepage into water course or Inform respective authorities and sewage system. Do not allow to enter sewers/ curface 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 Zandling and storoge · 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. Unsuitable material for receptables: carbon stell.
Suitable material for receptables: stainless stell and plastics.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: keep receptacle tightly sealed. \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ E REPORTE 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
Coneral protective and hygichic messures
Keep away from foodstuffs, beverages and feed. Immediately remove all solled and contaminated clothing Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.
Brosthing equipment: Not required.
Protection of hands: Protective gloves.
Material of gloves · Material of gloves Neoprene Penetration time of glove meterial 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. Sym protection: Face protection Body protection: Protective work clothing. Meoprene 9 Physical and chemical properties · General Information (contd. on page 3) 

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## NUOSPERSE FA 192

Page: 3/5				ty Data She O/DIS 11014			
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						(Cont	d. of page 2)
- Form: Fluid - Color: Clear - Odor: Nearly odorless	1						
•				Value/R	ange	Unit	Method
<ul> <li>Change in condition</li> <li>Molting point/Melting</li> <li>Boiling point/Melling</li> </ul>	range range	3		*	-5 > 250		DGF-C-IV-3A
<ul> <li>Flash point:</li> </ul>					> 200	°C	ASTM D92
· Ignition température:			• •		> 400	°C	
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<ul> <li>Danger of explosion; Product does not pres explosion hazard.</li> </ul>	ent an						
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12 Ecological Informatio	<u>n</u>						
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Acquarie toxicity: • fish toxicity, LC50:						(Conto	1. on page 4)
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-02-06-2903 11:25am From-



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NUOSPERSE FA 192 Page: 4/5 Material Safety Data Sheet acc. to ISO/DIS 11014 Reviewed on: 07/15/2002 Printing date: 02/06/2003 -----Trade Dama: MUOSPERSE FA 192 (contd. of page 3) Behavior is sawage processing plants: In case of judicious use the product does not cause disturbances in water purification plants, according to experiences made so far. Ceneral notas: 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. · Ceneral notes: \_ \_ \_ \_ \_ \_ \_ \_ \_ 12 Disposal considerations · Product: • Recommandation Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Uncleaned packagings;
kccommendation; 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 · Froduct related harard informations: The product has been classified and marked in accordance with directives on hazardous materials. · Mesard symbols: Xi Irritant Alex purabup: 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 · Risk phrases: Safety phrases: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 27/39 Wear suitable gloves and eye/face protection.
 Avoid release to the environment. Refer to special instructions/Safety data sheets · National regulations - Mater bazard class: Water hazard class 1 (Accessment 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 

02-06-2003 11:25am From-

SS.9 JATOT

Sasol Servo BV



## NUOSPERSE FA 192

Page: 5/5

# Meterial Safety Data Sheet acc. to ISO/DIS 91014

Printing date: 02/06/2003	Reviewed con: 07/15/2002
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provided without any warranty, express corractness. The conditions or methods disposal of the product are beyond our	or handling, storage, use of

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 

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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## **ANTAROX BL-240**

Date Prepared: 12/27/05

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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

 $\begin{array}{l} \textbf{Molecular Formula:} \\ \text{CH}_3(\text{CH}_2)_{6-8}\text{CH}_2(\text{C}_2\text{H}_4\text{O})_m(\text{C}_3\text{H}_6\text{O})_n\text{OH} \end{array}$ 

## 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.

## Page 2 of 7

## **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 developes 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.

## Page 3 of 7

## 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**

## Page 5 of 7

## 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)	Р
AUSTRALIA (AICS)	Y 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 Heaith Hazard	- YES
Chronic Health Hazard	- NO

## STATE REGULATIONS:

This product contains the following components that are regulated under California Proposition 65:

Ingredient Name	Cancer	Reprod.	No Sign. Risk Lvl (ug/day)	
	List	List	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 - Permissable 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:**

The information herein is given in good faith but no warranty, expressed or implied, is made.

\*\* End of MSDS Document \*\*

CONTRACTOR OF THE DEPARTMENT	HAZ	ZARDOUS MA	TERIALS I	NVENTO	RY FOF	FOR	M 3
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FACILITY ID# 3	0 0 3 5	38 BUSINESS	NAME ANCED CH	EMISTRY	F TECH	NOLOGY,I	NC.
		I. FACILITY	INFORMATION				
CHEMICAL LOCATION	(BARC M	ATERIAL ST	DRAGE				4
CONFIDENTIAL LOCA		No 5 MAP#	1	6 0	RID# -	55	7
EPCRA		II. CHEMICAL	INFORMATION				
	URFYNOL 465	SUR FALTAN	T WASTE [	] Yes 8 T	RADE SECRET	Yes N	io 11
COMMON NAME	SURFACTANT				n EHS Chemical f EHS is "Yes", all	Yes N amouanta must be LBS	io 12
CAS# 9014-	85-1 10 FIRE CODE	HAZARD CLASSES (supplied by	GGFD)				13
TYPE (Check one liem only)		E C. WASTE	14 RADIOACTIVE	Tres AN	6 15 CUF	RIES	16
PHYSICAL STATE (Check one Rem only)		C. GAS 17 FI	ED HAZARD . F ATEGORIES . d A	IRE D. RE		PRESSURE RELEASE	18
AVERAGE DAILY	19 MAXIMUM DAILY AMOUNT	20			STATE WAS	TE CODE	22
		23 DAYS ON SITE			ST CONTAINER		25
C. POU	NDS d. TONS unt must be in pounds.	365	DAYS		1	GAL CAN	
STORAGE CONTAINER (Check all that apply)	ABOVEGROUND TANK     b. UNDERGROUND TANK     c. TANK INSIDE BLDG     d STEEL DRUM	PLASTIC DRUM     T. NONMETALLIC DRUM     O. METAL CONTAINER     h. CARBOY	☐ i, VAT ☐ I, FIBER DRUM ☐ I, BAG(S) ☐ I, BOX(S)	m Cylinde n. Glass C o Plastic ( p. IN Mach	ONTAINER CONTAINER	q. TANK WAGON     r. RAIL CAR     s. TOTE BIN     t. OTHER	26
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STORAGE TEMPERATU	IRE AMBIENT	D. ABOVE AM	BIENT 🗋 ç	BELOW AMBIENT	🔲 d.	CRYOGENIC	28
%WT	HAZARDOUS CON	IPONENT (For mixture o	r waste only)	EH	S	CAS #	
1 100 29	Ethoxylated 2,9,7.9	itetrathy 15d	ecyn4-7d:31	🗆 Yes 🛛	No 31	901435-1	32
2 29			30	🗆 Yes 🗖	No 31	·····	32
3 29			30	🗆 Yes 🗖	No 31		32
4 29			30	🛛 Yes 🛛	No 31		32
5 29			30	l	No 31		32
If more hezerdous compon	ents are present at greater than 1% by weig	ht if non-carcinogenic, or 0.1% by PLACARDING I		ch additional sheets	of paper capturing	the required information.	
			Г				
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DOT HAZARD CL	ASS	3	м	HEALTH (BLUE)	$\langle z \rangle \langle \phi \rangle$		
	Refer to shipping	papers or MSDS		SPECIAL HAZARD		WHITE OX/W. <sup>37</sup>	
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PRODUCTS 2-

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. Atlentown, 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-	9014-85-1	100%
diol		_ <u></u>

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 instation.
Chronic Health Hazard	This product contains no listed carcinogens according to IARC, ACGIF, 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	

	1/6
Air Products and Chemicals, Inc	SURFYNOL @ 465 SURFACTANT

Revision Date 11/06/2005

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# Target Organs Eyes. Aggravated Medical Condition Eye disease 4. FIRST AID MEASURES General advice Seek medical advice. If breathing has stopped or is fabored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulations.

	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	<ul> <li>Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.</li> </ul>
Inhalation	Move to fresh air.

# 5. FIRE-FIGHTING MEASURES

Suitable axtinguishing medla	Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical. Dry sand. Limestone powder.
Specific hazards	<ul> <li>Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and taxic fumes.</li> </ul>
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	<ul> <li>Use self-contained breathing apparatus and chemically protective ciothing.</li> <li>Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.</li> </ul>
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

Air Products and Chemicals,Inc SURFYNOL @ 465 SURFACTANT

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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 lightly 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 sleave 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 mmHg at 21 °C
Density	: 64.925 lb/ft3 (1 04 g/cm3) at 70 °F (21 °C)

Air Products and Chemicals.Inc

Revision Date 11/06/2005		MSDS Number 300000004762 Print Date 09/24/2007
рH	: 7	·
Bo ling point/range	: 784 "F (418 °C)	v
⊡ash point	: > 110 °C	
0. STABILITY AND REA	CTIVITY	
Stability	: Stable under normal conditions.	
Materials to avoid	Dehydrating Agents.	

į

	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.

1 4/6 SURFYNOL @ 465 SURFACTANT Air Products and Chemicals, Inc.

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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 ; Skøletonema costatum.
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Toxicity to other organisms : No data available.

#### Persistence and degradability

Mobility	: No data available.
Bioaccumulation	No data s 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

## Material Safety Data Sheet Version 1.14

Dout	10.00	O	1 1 10 0 10 0 0 0
LAA	ISION.	Date	11/06/2005

## MSDS Number 30000004762 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
Canada	DSL	EINECS inventory or no longer polymer. Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	the second se	included on inventory.
	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

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/

Air Products and Chemicals.Inc SURFYNOL @ 465 SURFACTANT 医铜

Version 1.14 Revision Date 11/06/2005

#### MSDS Number 300000004762 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 m Species : Skøletone	•

Toxicity to other organisms : No data available.

## Persistence and degradability

Mobility	: No data available
Bioaccumulation	: No data s 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

## Material Safety Data Sheet Version 1.14

MSDS	Number 30000004762	
	Print Date 09/24/2007	

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## WHMIS Hazard Classification

Toxic Material Causing Other Toxic Effects

## **16. OTHER INFORMATION**

## HMIS Rating

Health Flammability Physical hazard

Prepared by

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