

# CITY OF GARDEN GROVE OFFICE OF THE CITY CLERK

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

March 15, 2021

Request # 6638 Requester: Aimee Oh

Company: ENCON Solutions, Inc.

Re: 12601 Monarch St.

Dear Ms. Oh,

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

Mayor

#### John R. O'Neill

Mayor Pro Tem - District 2

### George S. Brietigam

Council Member - District 1

#### Diedre Thu-Ha Nguyen Council Member - District 3

### **Patrick Phat Bui**

Council Member - District 4

### Stephanie Klopfenstein

Council Member - District 5

#### Kim B. Nguyen

Council Member - District 6

□ADD	□DELETE □REVISE		200	P	age of
I. FACILITY INFORMATION					
BUSINESS NAME ( EARTH FRIENDL	Same as FACILITY NAME or DBA – Doing Business As) Y PRODUCTS				3
CHEMICAL LOCAT	ION	201	CHEMICAL LOCA  X YES	ATION CONFIDENTIAL, EP	PCRA 202
FACILITY ID#	F A 0 0 5 1 8 0 2	1 MAP	# (optional) 2	03 GRID#(optional)	204
	II. CHEMICAL INFO	DRMATIC	ON		
CHEMICAL NAME Phosphoric acid		205	TIGHDE SECRET	Yes	206
COMMON NAME		207		Yes	208
CAS# 7664-38-2		209		ll amounts below must be in I	lbs.
FIRE CODE HAZAF	D CLASSES (Complete if required by CUPA)				210
Corrosive (CORR					
HAZARDOUS MATER TYPE (Check one item o		RADIOAC	TIVE Yes	212 CURIES	213
PHYSICAL STATE (Check one item only)	a SOLID No. LIQUID c. GAS	LARGEST	CONTAINER 55.0		215
FED HAZARD CATEG (Check all that apply)	ORIES  a. FIRE b. REACTIVE c. PRESSURE RELEASE	d. ACUTE	HEALTH e CHR	ONIC HEALTH	216
AVERAGE DAILY AM	OUNT 217 MAXIMUM DAILY AMOUNT 218	ANNUAL	WASTE AMOUNT	219 STATE WASTE COD	DE 220
55.0	110.0				
UNITS*  (Check one item only)  La GALLONS b. CUBIC FEET c. POUNDS d. TONS  (Check one item only)  La GALLONS b. CUBIC FEET c. POUNDS d. TONS  (Check one item only)  A GALLONS b. CUBIC FEET c. POUNDS d. TONS  365.0					
STORAGE CONTAINER  a. ABOVE GROUND TANK b. UNDERGROUND TANK c. PLASTIC/NONMETALLIC DRUM i. FIBER DRUM m. GLASS BOTTLE q. RAIL CAR p. UNDERGROUND TANK c. TANK INSIDE BUILDING c. TANK INSIDE BUILDING d. STEEL DRUM l. SILO l. CYLINDER p. TANK WAGON					200
STORAGE PRESSURE		BELOW AMB	<u></u>		223
STORAGE TEMPERAT	URE 🔀 a. AMBIENT 🔲 b. ABOVE AMBIENT 🔲 c. I	BELOW AMB	ENT d CRYOG	ENIC	225
%WT	HAZARDOUS COMPONENT (For mixture or waste or	ıly)	EHS	CAS#	
1 75.0 226	Phosphoric Acid	227	Yes 228	7664-38-2	229
2 25.0 230	Water	231	Yes 232	7732-18-5	233
3 234		235	Yes 236		237
4 238		239	Yes 240		241
5 242	5	243	Yes 244		245
If more hazardous compone	nts are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if	carcinogenic, at	tach additional sheets of pape	r capturing the required informatio	in.
ADDITIONAL LOCA	LLY COLLECTED INFORMATION				246
				70.000	a -
				If EPCRA, Pleas	e Sign Here

□ADD		ELETE	□REVISE		200		Page _	of
		I. F	ACILITY INFOR	MATIO	N			
BUSINESS NAME ( EARTH FRIENDL	Same as FACILITY NAM. Y PRODUCTS	E or DBA – Doing E	Business As)		***************************************			3
CHEMICAL LOCAT	TION			201	CHEMICAL LOC.	ATION CONFID	ENTIAL EPCRA	202
FACILITY ID#	F A 0 0 5	1 8 0	2	1 MAP	# (optional)	GRID#(opti	onal)	204
		II. Cl	HEMICAL INFO	RMATIC	ON			
CHEMICAL NAME				205	TRADE SECRET	☐ Ye	s	206
COMMON NAME				207		ect to EPCRA, refer to		208
CAS# 67-63-0				209	*If EHS is "Yes", a			
FIRE CODE HAZAR	D CLASSES (Complete if req	nired by CUPA)						210
Flammable Liquid	, Class I-B (3.3 I-B)							
HAZARDOUS MATER TYPE (Check one item of		MIXTUREc. V	VASTE 211	RADIOAC	TIVE Yes	212 CU	JRIES	213
PHYSICAL STATE (Check one item only)	a solid Xb	LIQUID C. G	AS 214	LARGEST	CONTAINER 55.0			215
FED HAZARD CATEGORIES (Check all that apply)  X a FIRE b. REACTIVE c. PRESSURE RELEASE d. ACUTE HEALTH  216								
AVERAGE DAILY AM	OUNT 217	MAXIMUM DAILY	AMOUNT 218	ANNUAL	WASTE AMOUNT	219 STATE	WASTE CODE	220
55.0		220.0		0.0				
UNITS* (Check one item only)	🔀 a GALLONS	b. CUBIC FEET [If EHS, amount must be	c. POUNDS d. TO	)NS		DAYS ON	SITE: 365.0	222
b. UI	BOVE GROUND TANK NDERGROUND TANK ANK INSIDE BUILDING TEEL DRUM	e PLASTIC/NONMI f CAN g CARBOY h SILO	ETALLIC DRUM i. FI j. Ba k B	AG	m. GLASS BOTTLE n. PLASTIC BOTT 0. TOTE BIN p. TANK WAGON	LEr.OTH		-
STORAGE PRESSURE	a. AMBIENT	b. ABOVE A		LOW AMB	<u> </u>			223
STORAGE TEMPERAT	URE X a AMBIENT	b. ABOVE A	MBIENT C. BE	LOW AMB	ENT d CRYOG	ENIC		225
%WT	HAZARDOUS CO	MPONENT (For 1	mixture or waste only	•)	EHS		CAS#	
1 226				227	Yes 228			229
2 230				231	Yes 232			233
3 234				235	Yes 236			237
4 238				239	Yes 240			241
5 242					Yes 244	***		245
If more hazardous compone	nis are present at greater than 19	by weight if non-carcine	genic, or 0.1% by weight if ca	rcinogenic, att	ach additional sheets of pape	er cap turing the requi	red information.	- 1-
ADDITIONAL LOCA	LLY COLLECTED INFO	RMATION						246
						If EP	CRA, Please Sign	Here

# UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS MATERIALS HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

☐ADD	DELETE REVISE	reaj	200	Page	of
	I. FACILITY INFORMA	TION	· · · · · · · · · · · · · · · · · · ·		
BUSINESS NAME (S	Same as FACILITY NAME or DBA – Doing Business As)				3
CHEMICAL LOCAT BUILDING	ION	201	CHEMICAL LOCAT	ION CONFIDENTIAL EPCRA	202
FACILITY ID#	F B 11 11 5 1 8 11 2	MAP# 1	(optional) 203	GRID#(optional) L5	204
	II. CHEMICAL INFORMA	ATIO	N		
CHEMICAL NAME		205	TRADE SECRET	Yes	206
Ethylene glycol mo	inobutyl ether	207	If Subject	to EPCRA, refer to instructions	000
Glycol Ether EB		207	EHS*	Yes	208
CAS# 111-76-2		209	*If EHS is "Yes", all	amounts below must be in lbs.	
	D CLASSES (Complete if required by CUPA) d , Class III-A (1.1 III-A)			Also a Maria Harris	210
HAZARDOUS MATER TYPE (Check one item or		DIOACT	IVE Yes	212 CURIES	213
PHYSICAL STATE (Check one item only)	Tr sepp Me ridoip Tr ova	RGEST C	CONTAINER 55.0		215
FED HAZARD CATEGO (Check all that apply)		ACUTE I	HEALTH e. CHRON	NC HEALTH	216
AVERAGE DAILY AM	OUNT 217 MAXIMUM DAILY AMOUNT 218 ANN 110.0 0.0		ASTE AMOUNT	219 STATE WASTE CODE	220
UNITS* (Check one item only)			221	DAYS ON SITE 365.0	222
STORAGE CONTAINER  a. ABOVE GROUND TANK b. UNDERGROUND TANK container contai					223
STORAGE PRESSURE	a. AMBIENT b. ABOVE AMBIENT c. BELOW	/ AMB IE	INT		224
STORAGE TEMPERAT	URE 🔀 a. AMBIENT 🔲 b. ABOVE AMBIENT 🔲 c. BELOW	AMB IE	NT d. CRYOGEN	NIC .	225
%WT	HAZARDOUS COMPONENT (For mixture or waste only)		EHS	CAS#	
1 226	m	Y	es 228		229
2 230	231	□ч	Tes 232		233
3 234	235	□ч	Tes 236		237
4 238	239	П	Čes 240		241
5 242	243	Г	1	PHH Philippin	245
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 cap turing the required information.					
ADDITIONAL LOCA	LLY COLLECTED INFORMATION				246
				If EPCRA, Please Sign	Here

□ADD		DELETE		REVISE			200			Page	_of
			I. FACILIT	Y INFOR	MATI(	ON					
BUSINESS NAME (S	Same as FACILITY NAM Y PRODUCTS	Æ or DBA –	Doing Business As	;)							3
CHEMICAL LOCATE	ION	I I	-1		2	201	CHEMICAL LOCAT	TON C	ONFIDENTIAL	EPCRA	202
FACILITY ID #	F A 0 0 5	1 8	0 2		1 MA	AP# (or	tional) 203	GRI K8	D# (optional)		204
			п. снеміс.	AL INFO	RMAT	ION					
CHEMICAL NAME		n e			20	105	TRADE SECRET		Yes		206
d-Limonene							If Subject	t to EPCR	A, refer to instruction	15	
COMMON NAME					2	107	EHS*		Yes		208
CAS# 5989-27-5					20	109	If EHS is "Yes", all	amount	s below must be	in Ibs,	56
FIRE CODE HAZARI Combustible Liquic	D CLASSES (Complete if re d, Class II (1.1 II)	quired by CUPA)									210
HAZARDOUS MATER I TYPE (Check one item or		b. MIXTURE	c. WASTE	211	RADIO/	ACTIV	E Yes	212	CURES		213
PHYSICAL STATE (Check one item only)	∏a. SOLID 🔀	b. LIQUID	C. GAS	214	LARGES	ST CO	NTAINER 55.0				215
FED HAZARD CATEGORIES (Check all that apply)  a. FIRE b. REACTIVE c. PRESSURE RELEASE d. ACUTE HEALTH  c. CHRONIC HEALTH					216						
AVERAGE DAILY AMO	OUNT 217	MAXIMUM	DAILY AMOUNT	218	ANNUA	LWA	STE AMOUNT	219	STATE WASTE (	CODE	220
55.0		55.0			0.0						
UNITS* (Check one item only)	🔀 a. GALLONS		FEET . c. POUN		ONS		z	1 DA	YS ON SITE:	365.0	222
STORAGE CONTAINER  a ABOVE GROUND TANK b. UNDERGROUND TANK f CAN j. BAG n. PLASTIC BOTTLE r. OTHER  c. TANK INSIDE BUILDING g. CARBOY k. BOX c. TOTE BIN					223						
STORAGE PRESSURE	a. AMBIENT	□ b. 4	ABOVE AMBIENT	c. B1	ELOW AN	/BEN	Т				224
STORAGE TEMPERATO	URE X a AMBIENT	☐ b. A	ABOVE AMBIENT	C. Bi	LOW AM	BEN	T d. CRYOGE	NIC			225
%WT	HAZARDOUS C	OMPONEN	T (For mixture o	r waste only	y)		EHS		CAS#		
1 226					227	Υe	s 228				229
2 230					231	Ye	s 232				233
3 234					235	Υe	s 236				237
4 238					239	Ye	s 240			·	241
5 242		******		***************************************	243 [	Ye	s 244		······		245
If more hazardous compone	nis are present at greater than	l% byweight if r	on-carcinogenic, or 0.1!	4 byweight if ca	rcinogenic,	attach	additional sheets of paper	cap turing	the required inform	nation.	
ADDITIONAL LOCA	LLY COLLECTED INF	ORMATION					. 700		1		246
									If EPCRA, P	lease Sig	n Here

□ADD	□DELETE □REVISE		200	Page	of
	I. FACILITY INFORMA	TION	1		
BUSINESS NAME (S EARTH FRIENDL	Same as FACILITY NAME or DBA – Doing Business As) Y PRODUCTS	ñ			3
CHEMICAL LOCAT BUILDING	ION	201	CHEMICAL LOCA YES	TION CONFIDENTIAL EPCRA	202
FACILITY ID#	F A 0 0 5 1 8 0 2	MAP#	(optional) 20	GRID#(optional)	204
	II. CHEMICAL INFORMA	TIO	N		
CHEMICAL NAME Didecyl dimethyl a	mmonium chloride	205	TRADE SECRET	Yes	206
COMMON NAME	Annonian chichae	207	If Subje	ect to EPCRA, refer to instructions	208
Maquat 4450-E			EHS*	Yes	
CAS# 7173-51-5		209	*If EHS is "Yes", al	l amounts below must be in lbs.	***************************************
FIRE CODE HAZAR	D CLASSES (Complete if required by CUPA)				210
					1101
HAZARDOUS MATER: TYPE (Check one item o		DIOACT	TIVE Yes	212 CURES	213
PHYSICAL STATE (Check one item only)	a. SOLID to LIQUID c. GAS 214 LAR	GEST (	CONTAINER 55.0		215
FED HAZARD CATEGO (Check all that apply)		CUTE	HEALTH  e. CHRO	ONIC HEALTH	216
AVERAGE DAILY AM	OUNT 217 MAXIMUM DAILY AMOUNT 218 AND	V JAUP	VASTE AMOUNT	219 STATE WASTE CODE	220
55.0	55.0				
UNITS* (Check one item only)	Xa. GALLONS			DAYS ON SITE: 365.0	222
STORAGE CONTAINER  a ABOVE GROUND TANK b. UNDERGROUND TANK container contain					
	TEEL DRUM		p. TANK WAGON	·····	223
STORAGE PRESSURE					224
STORAGE TEMPERAT	URE 🔀 a. AMBIENT 🔲 b. ABOVE AMBIENT 🔲 c. BELOW	AMB	ENT d. CRYOG	ENIC	225
%WT	HAZARDOUS COMPONENT (For mixture or waste only)		EHS	CAS#	
1 52.0 226	Didecyl dimethyl ammonium chloride 227		Yes 228	7173-51-5	229
2 12.0 230	Ethanol 231		Yes 232	64-17-5	233
3 3.0 234	Didecylmethylamine 235		Yes 236	7396-58-9	237
4 238	239		Yes 240		241
5 242	243				245
If more hazardous compone	nts are present at greater than 1% by weight if non-carcinogenic, or 8.1% by weight if carcinog	enic, atte	ch additional sheets of pape	r cap turing the required information.	- 1
ADDITIONAL LOCA	LLY COLLECTED INFORMATION				246
<u></u>				If EPCRA, Please Sign	Here

□ADD	□DELETE □REVISE		200	Page	_of
	I. FACILITY INFOR	MATIO	N		
BUSINESS NAME ( EARTH FRIENDL	Same as FACILITY NAME or DBA – Doing Business As) Y PRODUCTS				3
CHEMICAL LOCAT	TON	201	CHEMICAL LOCA YES	TION CONFIDENTIAL EPCRA	202
FACILITY ID#	F A 0 0 5 1 8 0 2	1 MAP	# (optional) 20	GRID#(optional)	204
	II. CHEMICAL INFOR	RMATIO	ON		
CHEMICAL NAME Caustic soda, solu	ition	205	IIIII DE DECICE!	Yes	206
COMMON NAME		207		ect to EPCRA, refer to instructions  Yes	208
CAS# 1310-73-2		209		l amounts below must be in lbs.	
	D CLASSES (Complete if required by CUPA)				210
Corrosive (CORR)					
HAZARDOUS MATER TYPE (Check one item o		RADIOAC	CTIVE Yes	212 CURIES	213
PHYSICAL STATE (Check one item only)	a SOLID k LIQUID c GAS 214	LARGEST	CONTAINER 55.0		215
FED HAZARD CATEGORIES (Check all that apply)  a. FIRE b. REACTIVE c. PRESSURE RELEASE d. ACUTE HEALTH e. CHRONIC HEALTH					
AVERAGE DAILY AM	OUNT 217 MAXIMUM DAILY AMOUNT 218	ANNUAL	WASTE AMOUNT	219 STATE WASTE CODE	220
55.0	55.0				
UNITS* (Check one item only)	A GALLONS b. CUBIC FEET c. POUNDS d. TO	ons and	T Breeze and	DAYS ON SITE: 365.0	222
∐եւՄ	BOVE GROUND TANK  MDERGROUND TANK  T CAN  ANK INSIDE BUILDING  B CARBOY  B L B		M m. GLASS BOTTLE n. PLASTIC BOTT 0. TOTE BIN		
d. S	TEEL DRUM . SILO C	YLINDER	p. TANK WAGON		223
STORAGE PRESSURE	a. AMBIENT b. ABOVE AMBIENT c. BE	LOW AMB	ENT		224
STORAGE TEMPERAT	URE 🔲 a. AMBIENT 🔲 b. ABOVE AMBIENT 🔲 c. BE	LOW AMB	ENT d CRYOG	ENIC	225
%WT	HAZARDOUS COMPONENT (For mixture or waste only	)	EHS	CAS#	
1 50.0 226	Sodium Hydroxide	227	Yes 228	1310-73-2	229
2 50.0 230	Water	231	]Yes 232	7732-18-5	233
3 234		235	Yes 236		237
4 238		239	Yes 240		241
5 242			Yes 244		245
If more hazardous compon	ents are present at greater than 11% by weight if non-carcinogenic, or 0.11% by weight if ca	rvinogenic, a	itach additional sheets of pape	er cap turing the required information.	
ADDITIONAL LOCA	ALLY COLLECTED INFORMATION				246
			·	If EPCRA, Please Sign	n Here

# UNIFIED PROGRAM CONSOLIDATED FORM FACILITY INFORMATION

# BUSINESS OWNER/OPERATOR IDENTIFICATION

T TO DAILUTE	CAPTON		Page	of
I. IDENTIFI				
FACILITY ID# FA0051802	1 BEGINNING I 07/31/2	013	ENDING DATE 12/31/2013	101
BUSINESS NAME (Same as FACILITY NAME of DBA - Doing Business As)  EARTH FRIENDLY PRODUCTS		3 BUSINES: 7148	S PHONE 3913100	102
BUSINESS SITE ADDRESS 12601 MONARCH St		103 BUSINES 71489	SFAX	102a
BUSINESS SITE CITY GARDEN GROVE	104 CA	ZIP CODE 92841	105 COUNTY	108
DUN & BRADSTREET 00-299-2220	106	PRIMARY SIC 2841	107 PRIMARY NAIC: 32561	S 107a
BUSINESS MAILING ADDRESS 12601 MONARCH St				108a
BUSINESS MAILING CITY GARDEN GROVE	1086	STATE 108c	ZIP CODE 92841	108d
BUSINESS OPERATOR NAME	109	BUSINESS OPER		110
II. BUSINESS	OWNER			
OWNER NAME	111	OWNER PHONE		112
OWNER MAILING ADDRESS		1		113
OWNER MAILING CITY	114	STATE 115	ZIP CODE	116
III. ENVIRONMEN	TAL CONTACT			
CONTACT NAME Wendy Kavousy	117	71489131		118
CONTACT MAILING ADDRESS 12601 Monarch Street	119	CONTACT EMA		119a
CONTACT MAILING CITY Garden Grove	120	STATE 121		122
	ENCY CONTACT		-SECONDARY-	
				-
				-
&(// 3AGER#	127 &(// PAGER#	¥		132
(0\$,/	(0\$,/			
ADDITIONAL LOCALLY COLLECTED INFORMATION				133
Certification: Based on my inquiry of those individuals responsible for obtaining the ir am familiar with the information submitted and believe the information is true, accurate		ler penalty of law th	at I have personally examine	d and
SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE 134	NAME OF DOCU	MENT PREPARER	135
NAME OF SIGNER (print) 136 Wendy Kavousy	TITLE OF SIGNER Chemist			137

# **GARDEN GROVE**



# FIRE DEPARTMENT

# HAZARDOUS MATERIALS DISCLOSURE PROGRAM

REPORTING FORMS PACKET

SHORT VERSION

FOR OFFICIAL USE ONLY
FACILITY ID NO. 8735
BUSINESS NAME Earth Friendly Products
BUSINESS ADDRESS 12601 Monarch Street
APPROVED BY G DATE 3511
NEW BUSINESS YES NO UPDATE
PICK 4D BUSLIST CALARP: CUPA: GIS
FEE

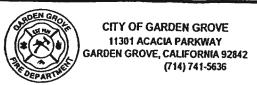


# CITY OF GARDEN GROVE FIRE DEPARTMENT

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

Hazardous Materials Business Information Form

	Page of 3
BUSINESS INFORMATION	
FACILITY # 3 0 0 3 5 BEGINNING DATE  BUSINESS NAME	1 ENDING DATE 2
Earth Friendly Products/Venus Labs	4 ( BUSINESS PHONE 3100 5
BUSINESS SITE ADDRESS 12601 Monarch Street	(710-05) 5100 6
GARDEN GROVE 7 STATE CA	°   32841-3918
DUN & BRADSTREET 00-299-2220 10 SIC CODE (4 DIGIT#)	11 FIRE DISTRICT 12
ORANGE	13
BUSINESS OPERATOR NAME FIRS Jana 14 OPERATOR 714-	891-3100 Y(221) 15
OWNER NAME BUSINESS OWNER	
OWNER MAILING ADDRESS	16 DWNFR-PHONE 47
CITY 19 STATE	20 ZIP 21
ENVIRONMENTAL CONTACT	
CONTACT NAME FINAS CAMA	22 (SOO)-801-3100 23
contact Mailing ADDRESS 12601 Monarch Street	24
CITY	26 ZIP 92841-3918 27
PRIMARY EMERGENCY CONTACTS	SECONDARY
ADDITIONAL LOCALLY COLLECTED INFORMATION	
ADDITIONAL LOCALLY COLLECTED INFORMATION  DESCRIPE THE TYPE OF BUSINESS OPERATION:	38 TOTAL # OF EMPLOYEES 39
BILLING ADDRESS IF DIFFERENT FROM ABOVE DOLO DOLO TIL 60191-2688	40 ATTENTION R. A. 41
PROPERTY OWNER NAME	13 PHONE 44
Certification: Based on my inquiry of those individuals responsible for objecting the information L	certify under penalty of law that I
have personally examined and am familiar with the information submitted and believe the information is SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	5 DATE   46
NAME OF SIGNER (print)  47 NAME OF DOCUMENT PREPARER (p.	62/06/2008
TITLE OF SIGNER GENERA MANAGEY  48 TITLE OF DOCUMENT PREPARER  18 HEAL NEWST OF	euical Engineer 50
Business Info Form 1 03/06/03	Valle Condition



# **CUPA**

# **BUSINESS ACTIVITIES**

				PageJ of		
I. FACILIT	A STATE OF THE STA	A STATE OF THE PARTY OF THE PAR	in Sur			
FACILITY ID# 3 0 0 3 5		# (Hazan	dous 1	Waste Only)		
BUSINESS NAME (Same as FACILITY NAME or DBA-Doing Busines	is As)		-			
Earth Friendly Products Venus Laboratories INC.						
NOTE: If you shook	VEC 4-			eut. It.		
NOTE: If you check	1 5 10	any pa	an o	T this list,		
please submit the Business	Owner/	Operat	or lo	dentification page.		
Does your facility		If Yes. o	lease	e complete these pages of the UPCF		
A. HAZARDOUS MATERIALS	1			The state of the s		
Have on site (for any purpose) hazardous materials at or above 5: 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?	e e ·		4	HAZARDOUS MATERIALS INVENTORY - CHEMICAL DESCRIPTION (Form 3)		
B. UNDERGROUND STORAGE TANKS (USTs)						
Own or operate underground storage tanks?	YES	🔀 NO	5.	✓ UST FACILITY (Formerly SWRCB Form A) ✓ UST TANK (one page per tank) (Formerly Form B)		
2. Intent to upgrade existing or install new USTs?	☐ YES	NO 🄀	6.	✓ UST FACILITY		
•	1			✓ UST TANK (one per tank)		
				✓ UST INSTALLATION - CERTIFICATE OF		
				COMPLIANCE (one page per tank) (Formerly Form C)		
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: - any tank capacity is greater than 660 gallons, or		_				
the total aggregate capacity for the entire facility (ASTs, drums and	☐ YES	MO	8.	✓ NO FORM REQUIRED TO CUPAS		
portable containers) greater than 1,320 gallons?	İ					
D. HAZARDOUS WASTE						
<ol> <li>Generate hazardous waste?</li> <li>Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC §25143.2)?</li> </ol>	YES YES	NO K	9. 10.	✓ EPA ID NUMBER - provide at the top of this page ✓ RECYCLABLE MATERIALS REPORT (one per recycler)		
3. Treat hazardous waste on site?	☐ YES	MO	11.	✓ ONSITE HAZARDOUS WASTE TREATMENT - FACILITY		
				(Formerly DTSC Forms 1772)		
				✓ ONSITE HAZARDOUS WASTE		
				TREATMENT - UNIT (one page per unit)		
4. Treatment subject to financial assurance requirements (for Domish.)				(Formerly DTSC Forms 1772A,B,C,D and L)		
Rule and Condition Authorization)?	TES	М ио	12.	✓ CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)		
5. Consolidate hazardous waste generated at a remove site?	YES	M NO	13.	✓ REMOTE WASTE/CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC		
Need to report the closure/removal of a tank that was classified waste and cleaned onsite?	YES	Мо	14.	Form 1196)  ✓ HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)		
LOCAL REQUIREMENTS				CERTIFICATION (Conneny DISC Point 1249)		
Cal-ARP: California Accidental Release Prevention Program 4&SC Chapter 6.95, Article 2, §25531 et seg	YES	□ио	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>				County COPA)		

# 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 Individual responsible for	(800) 424-8802

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 Flexican Pacific Plastic Facility F	Phone (74) 891-3191
To the South Facility The Cas Con Don!	Phone ()  Phone ()/4) 634-3134
Facility (Sempra Energy Utility) To the East	Phone ( )
Facility hree Dots	Phone (344) 799-6333 Phone ( )
Facility Facility Facility Facility	Phone (214) 903-8890
· donicy	Phone ( )

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

## **OPTIONAL NOTIFICATIONS:**

1.	Name: Varia Weste Managuent	(562) 944-338)	_
2.	Insurance Company Name:	(2-1) 200 700/	
	Jafeto	(800) 232-3226	

3. Poison Control Center – 24-Hour

1 (800) 876-4766

# **EVACUATION PLANS AND PROCEDURES:**

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

# **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 BUSINESS EMERGENCY PLAN

## **EVACUATION PLANNING**

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

1.	Working area: Batch Making
	Evacuation route: Route # 1
	Emergency exits: Exit Door #1
	Staging area: Front Parking Lot / Building
2.	Working area: Shipping Department
	Evacuation route: Route # 2
	Emergency exits: Exit Door #2
	Staging area: Front Parking Lot Building
3.	Working area: Production Area
	Evacuation route: Route # 3
	Emergency exits: Exit Door #2
	Staging area: Front Parking Lot Building
4.	Working area: The Offices
	Evacuation route: Route #4
	Emergency exits: Exit Door #3
	Staging area: Front Parking Lot Building
5.	Working area: Laboratory Front Office
	Evacuation route: Route # 5
	Emergency exits: Exit #4
	Staging area: Front Parking Lot Building

## GARDEN GROVE FIRE DEPARTMENT BUSINESS EMERGENCY PLAN

### **EVACUATION PLANNING**

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

6.	Working area:	2nd Floor Offices #6
	Evacuation route:	Route #6
	Emergency exits:	Exit Door #4
	Staging area:	Front Parking Lot Building
<b>ア・</b>	Working area:	UPS Area #2
	Evacuation route:	Route #2
	Emergency exits:	Exit Door #5
	Staging area:	Front Parking Lot / Building
	Working area:	
	Evacuation route:	
	Emergency exits:	
	Staging area:	
	Working area:	
	Evacuation route:	
	Emergency exits:	
	Staging area:	
	Working area:	
	Evacuation route:	
	Emergency exits:	
	Staging area:	8

# GARDEN GROVE FIRE DEPARTMENT BUSINESS EMERGENCY PLAN

## **EMPLOYEE RESPONSIBILITIES:**

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

JOB TITLE: Batch Makers
EMERGENCY FUNCTION(S):
a. Responsible for the Evacuation of Group#1 b.
b
C
d
JOB TITLE: Shipping Supervisor  EMERGENCY FUNCTION(S):  a. Responsible For the Evacuation of Group#2  b.
EMERGENCY FUNCTION(S):
a. Responsible For the Evacuation of Common of
b.
C.
d.
JOB TITLE: Production Supervisor
EMERGENCY FUNCTION(S):
a. Responsible Corthe Flocustion of Circulta
a. Responsible for the Evacuation of Group#3 b.
C
d.
u

# GARDEN GROVE FIRE DEPARTMENT BUSINESS EMERGENCY PLAN

### **EMPLOYEE RESPONSIBILITIES:**

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

JOB TITLE: Office Manager
EMERGENCY FUNCTION(S).
a. Responsible for the Evacuation of Group #4
b
C
d
JOB TITLE: CheMist
a. Responsible for the Evacuation of Group#5
b
C
d
JOB TITLE: CheMist Office Manager EMERGENCY FUNCTION(5):
EMERGENCY FUNCTION(S):
a. Responsible for the Evacuation of Group#6
b
C
d

# GARDEN GROVE FIRE DEPARTMENT BUSINESS EMERGENCY PLAN

### **EMPLOYEE RESPONSIBILITIES:**

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

 $\Delta$ 

JOB TITLE: Shipping Supervisor
EMERGENCY FUNCTION(S):
a. Responsible of the Evacuation of Group#5
b
C
d
JOB TITLE: General Manager
EMERGENCY FUNCTION(S):
a. Responsible for Checking that all the
b. Groups are Evacuating in the Front
c. of the Building (Parking Lot)
d
JOB TITLE:
EMERGENCY FUNCTION(S):
a
b
c
d

## GARDEN GROVE FIRE DEPARTMENT BUSINESS EMERGENCY PLAN

#### TRAINING:

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

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

Describe the type of training programs you either are currently using or will use
during the next year to provide the required employee training.  Employees Must be trained on the following Program:
Right to know Hotard Communication / 11505.
Intuny & Illness Prevention Program
Specific Protective equipments that Telequired for out Aro
Safe Work Habits.
No Smo Ring Policy.
Ellergenar Action Plan.
Fire Pre-sention Plan
Good House Repina
Lockment Town
Evacuation Digradure.
Responsible Delegate
Security Plan
Comercal Enfoty Puloc
Total and the second

### GARDEN GROVE FIRE DEPARTMENT BUSINESS EMERGENCY PLAN

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

- 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:

 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.

# 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.

Name:

Title: Fead-Chemist Chemical Engineer

Date: 02/06/2008



# GARDEN GROVE FIRE DEPARTMENT ENVIRONMENTAL PROTECTION SECTION

11301 Acacia Parkway Garden Grove, CA 92840 Business: 714 741-5600 Haz Mat: 714 741-5636

# Hazardous Materials Business Emergency Plan And Inventory Certification Statement

Business Name: Earth Friendly Produc	ts Telephone: 714 891 3100 est 221
Site Address: 12601 Monarch St. G.G.	
The California Health & Safety Code, Division 20, Chapter 6.95, the following:	Section 25505(c) and Section 25503.3(c) provide
A business that handles hazardous materials shall review All Emergency Plan (HMBEP) once every three years from the Department. A business may comply with the annual chemical certification statement to the Garden Grove Fire Department. A but the annual inventory submission requirements of the Emerge Act (Section 11022, Title 42, United States Code).	date of acceptance by the Garden Grove Fire inventory reporting requirement by submitting a usiness may not utilize this certification to meet
Note: A business may comply with the annual inventory reporting both of the following apply:	g requirements using this certification statement if
<ol> <li>The business has previously filed an inventory reporting form</li> <li>The business attests to the following:         <ul> <li>The information contained in the annual inventory form in Department is complete, accurate, and up to date.</li> <li>There has been no change in the quantity of any haza submitted annual inventory form.</li> <li>No hazardous material subject to the inventory requirement recently submitted annual inventory form.</li> </ul> </li> </ol>	most recently submitted to the Garden Grove Fire
THIS IS TO CERTIFY THAT THE HMBEP AND/OR CHEM (Please check applicable boxes.)	IICAL INVENTORY HAS BEEN REVIEWED.
☐ No changes are required to the HMBEP submitted to the Gard	en Grove Fire Department.
All the necessary changes/revisions have been made to the HN certification.	MBEP. The changes/revisions are attached to this
No c hanges are required to the c hemical inventory that was Department.	s previously on file with the Garden Grove Fire
All the necessary changes/revisions have been made to the attached to this certification.	chemical inventory. The changes/revisions are
AS AN AUTHORIZED REPRESENTATIVE, I CERTIFY U PERSONALLY EXAMINED AND AM FAMILIAR WITH BELIEVE THE INFORMATION IS TRUE, ACCURATE, AND (	I THE INFORMATION SUBMITTED AND
Print Name	Signature,
Job Title General Manay w	Date 3/5/08
Fire Department Inspector Rough Iden	ID# 3703



# **Hazardous Material Disclosure**

Business Information / Chemical Inventory / Business Emergency Plan

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



Address: 5	ras A. Ja	1		Date:	3/5/08
Occupant or DBA:	Earth F	ama (		File No:	6363
Owner/Manager:	12001		<del>lucts</del>		
Mooness		Moharch	24	Phone:	714 891 3100 es
	and Safety Code, Section the BEP packet, Hazarre Department. HazMat C		o properly complete Forms, and all mat	the Business Emergency terial safety data sheets	/ Plan (BMP) packet. You are within fifteen (15) days to the
An inspection at th	e above location/occ	upancy revealed the	following violation	2/0):	
Violation(s): CA Hea	lith and Safety Code C	hanter 6.95. Article 1 an	d Title 10 Sezeo	i(s).	
Failure to submit Failure to review Chemical invento The Emergency [HSC 25504(b)&( Notification Mitigation I Evacuation Employee Business Owner/ Failure to provide Site Map is incom Failure to report a 100% or mo Addition of Change in t Change in t	lous Materials Disclosure a Business Emergency Pl and/or revise the Business ry is incomplete and/or rev Response Plan is inadequ c)] Procedures Procedures Procedures Procedures Training Derator page is incomple name, title, and 24-hour in plete or insufficient. [HSC release or threatened rele	te or needs to be updated. number of emergency conta 25509] pase. [HSC 25507] emical inventory within 30 y of a disclosed material	Title 19 Div 2 Chapte FC 8001.3.2 red [HSC 25505(b)&( 9) ess the following issues the followi	er 3, CFC 8001.3.2  [c)]  ues and shall be immedi	of Regulations (@GR) ately revised and resubmitted:
Violation(s): Californi	a Fire Code 2001, Artic	les 79 & 80, Title 19 Pa	rt 9, California Cod	e of Regulations (CCF	))
☐ Provide for second ☐ Provide spill control ☐ Provide approved	lary containment for hazar of for hazardous materials cabinet if more than 10 ga and signs (NFPA 704, Cl and	dous materials liquids and	solids (CFC 8003.1.3	3.3)	
Responsible Party:	Y Des	2	Re-inspect	ion Date:	<del></del>
	1	require immediate corr			
Fire Dept. Inspector:	R. Walde				pject to civil penalties,
Condition Upon Re-i	- 100	n	ID #: _	3703	
ondition open Re-I	ispection:			Date:	
-4308.doc (05/06)	<u> </u>				



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

PART							
	ADD DELETE	REVISED 1			Page		19 2
FACILITY ID#. 3 0	0 3 5	38 BUSINES	h Friendly	Oralus	Le /\/0v	us I she	TUG
		I. FACILITY	INFORMATION	Y TONUL	5/VeV		LNC
CHEMICAL LOCATION	Monarch	<x. (;<="" td=""><td>- vdan C</td><td>10.40</td><td><math>C\Lambda</math></td><td>90011</td><td>1 4</td></x.>	- vdan C	10.40	$C\Lambda$	90011	1 4
CONFIDENTIAL LOCATIO	ON Yes	□ No 5 MAP#	-arden G	-rove	GRID#	7789	
Baltari	A CASE WAS	II. CHEMICA	L INFORMATION	(B) SEIGH	WING Same	6-15 9 7 5 Kg	
CHEMICAL NAME			The little of the last of the	Yes 8	TRADE SECRET	<b>∑</b> Yes [	□ No 11
COMMON NAME				9		e instructions	
CAS##	CCOSOFT		·		An EHS Chemica	Yes Yes	No 12
68605-	27-6 THE CODE	HAZARD CLASSES (supplied by	y GGFD)	-			13
TYPE (Check one item only)	a. PURE S.b. MIXTUR	RE C WASTE	14 RADIOACTIVE	Yes	No 15 C	URIES Ø	16
PHYSICAL STATE (Check one item only)	a. SOLID 🔀 b. LIQUID	C. GAS 17	ED HAZARD a.	FIRE b.	REACTIVE	c. PRESSURE RELEA	ASE 18
AVERAGE DAILY	DE 19 MAXIMUM DAIL	Y = = 20	ANNUAL WASTE AMOU	ACUTE HEALTH		e. CHRONIC HEALTH	1
UNITS a. GALLON	AMOUNT	23 DAYS ON SITE	ANNOAL WASTE AMOU	MA		STE CODE	9 22
C. POUNDS			365	24 LAR	SEST CONTAINER	•	25
STORAGE CONTAINER (Check all that apply)	a. ABOVEGROUND TANK b. UNDERGROUND TANK	e. PLASTIC DRUM	☐ i. VAT	m CYLIN		q. TANK WAGQ	N 26
	C. TANK INSIDE BLDG	g. METAL CONTAINER  h. CARBOY	L. FIBER DRUM	O PLAST	S CONTAINER IC CONTAINER	r. RAIL CAR s. TOTE BIN-	
STORAGE PRESSURE	a. AMBIENT	b. ABOVE AM	I. BOX(S)	p. IN MA	CH OR EQUIP	L OTHER	
STORAGE TEMPERATURE	a AMBIENT	☐ b. ABOVE AM		BELOW AMBIE		CRYOGENIC	27
%WT	HAZARDOUS COM	PONENT (For mixture of			HS	CAS	
1 0 29	Isopropy	Alcohol	30	☐ Yes	<b>№</b> No 31	67-63	-O 32
2 90 29	fatty acid	s, Soya	30	☐ Yes	Mo 31	68605-2	7-132
3 29		, ,	30	Yes	☐ No 31	00000	32
4 29			. 30	☐ Yes	□ No 31		32
5 29			30	☐ Yes	□ No 31		32
r more nazardous components	s are present at greater than 1% by weig	ht if non-carcinogenic, or 0.1% by PLACARDING I	weight if carcinogenic, atta	ch additional shee	ts of paper capturin	g the required information	on.
	1111002	CIL	NFORWATION	<u> </u>			
JNDOT#	Refer to shipping papers		33	NFPA FIRE (F	704 HAZARD	DIAMOND	
OOT HAZARD CLAS				HEALTH _	(3)	REACTIVE (YELLOW)	
	Refer to shipping	papers or MSDS	4	(BLUE) SPECI	AL C	WHITE	
PCRA YES	<b>м</b> ио	3	5	HAZAF	80 <b>*</b>	OX/W. 37	
x	•		REAL.	CE AC BEARD	/ CODIES S		
	If EPCRA, Please Sign	Here 3	c		FORM AS	F CHEMICAL	

Univar USA

013 01/11/07 ACCOSOFT 750

PRODUCT NAME:

ACCOSOFT 750

MSDS NUMBER:

STP0217

DATE ISSUED:

1/9/2007

SUPERSEDES:

12/5/2005

ISSUED BY:

009880

CHEMICAL PRODUCT & COMPANY IDENTIFICATION

ACCOSOFT 750

MSDS Number

1907

Issued On

01/09/07

Stepan Company

22 West Frontage Road

Northfield, IL 60093 USA

Telephone Numbers - 24 Hour Emergency Assistance

Medical

800-228-5635

Chemtrec

800-424-9300

Chemtrec Int'l 703-527-3887

Telephone Numbers - General Assistance General

(847) 446-7500

Product Number

3438

Product Class

Quaternary

MID4

3438

COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Weight Range
_Fatty acids, soya, reaction products with diethylenetriamine, ethoxylated, di-Me sulfate-quaternized	68605-27-6	90 %
_Isopropanol	67-63-0	10 %

HAZARDS IDENTIFICATION

Emergency Overview

Clear liquid, yellow color.

Warning! Flammable

May cause irritation to the eyes, skin, and respiratory system.

Health Effects: Eyes

This product may cause slight irritation to the eyes.

Health Effects: Skin

This product may cause irritation to the skin.

Health Effects: Inhalation

Inhalation of vapors or mists of the product may be irritating to the respiratory system. Excessive inhalation of this material causes headache, dizziness, nausea and loss of motor skills.

Health Effects: Ingestion

Ingestion of large amounts may produce gastrointestinal disturbances including irritation, nausea, and diarrhea.

#### 4 FIRST AID MEASURES

Immediately flush eyes with water for at least 15 minutes while holding eyelids open. If irritation persists get medical attention.

Skin

For skin contact flush with large amounts of water. If irritation persists, get medical attention. Immediately take off all contaminated clothing. Wash contaminated clothing before reuse.

Inhalation

If symptoms are experienced, remove source of contamination or move victim to fresh air. If symptoms persist, get medical attention. If the affected person is not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

Ingestion
If swallowed, get immediate medical attention.

5 FIRE FIGHTING MEASURES Flash Point

25 deg C

(77 F)

Extinguishing Media
Dry chemical, foam, carbon dioxide, water fog.

Fire Fighting Equipment / Instructions
Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6 ACCIDENTAL RELEASE MEASURES
SPILL AND LEAK PROCEDURES
Emergency Action:
Isolate spill or leak area immediately. Keep unauthorized
personnel away. Stay upwind. Keep out of low areas. Ventilate
closed spaces before entering.

Do not touch or walk through spilled material. Wear appropriate personal protective equipment during cleanup. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Large Spills: Dike ahead of liquid spill for later disposal. Prevent entry into waterways, sewers, basements or confined areas. Surfaces may become slippery after spillage.

7 HANDLING & STORAGE
Handling Procedures
Avoid contact with skin and eyes. Wash thoroughly after
handling. As with all chemicals, good industrial hygiene practices
should be followed when handling this material.

Storage Procedures
Avoid freezing or excessive heat.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION Engineering Controls Use with adequate ventilation.

Personal Protective Equipment: Eyes/Face Wear chemical goggles; face shield (if splashing is possible).

Personal Protective Equipment: Skin Wear suitable protective clothing. Use impervious gloves.

Personal Protective Equipment: Respiratory If vapors are present or irritation is experienced, NIOSH approved respiratory protection for organic vapors should be worn.

Personal Protective Equipment: General Eye wash fountain and emergency showers are recommended. ACGIH - Threshold Limits Values - 400 ppm STEL Short Term Exposure Limits (TLV-STEL) ACGIH - Threshold Limits Values -200 ppm TWA Time Weighted Averages (TLV-TWA) Mexico - Occupational Exposure 500 ppm STEL; 1225 mg/m3 STEL Limits - STELs Mexico - Occupational Exposure 400 ppm TWA; 980 mg/m3 TWA Limits - TWAs NIOSH - Health Standards -400 ppm TWA; 980 mg/m3 TWA; Exposure Limits 500 ppm STEL; 1225 mg/m3 STEL NIOSH - Health Standards - Health Mucous membrane irritation; Effects and Precautions possible carcinogenic effects NIOSH - Pocket Guide - IDLHs 2000 ppm IDLH (Immediately Dangerous to Life or Health) NIOSH - Pocket Guide - STELs 500 ppm STEL; 1225 mg/m3 STEL NIOSH - Pocket Guide - Target eyes, skin, respiratory Organs system NIOSH - Pocket Guide - TWAs 400 ppm TWA; 980 mg/m3 TWA OSHA - Final PELs - Time Weighted 400 ppm TWA; 980 mg/m3 TWA Averages (TWAs) \_Isopropanol 67-63-0

PHYSICAL & CHEMICAL PROPERTIES

Flash point 77 F

Boiling Point

Specific Gravity Percent Volatile

Vapor Pressure

Vapor Density Viscosity

Evaporation Rate RVOC

Pour Point pH Value

82.2 deg C

8 lb/gal 10 % (w/w)

(180 F)(0.9615 g/ml)

Not Determined or Unknown Estimated heavier than air.

2000 cps @ MHT

Estimated slower than ethyl ether.

10 % (Isopropanol)

10 C

6 @ 10% in Water/IPA

Appearance and Odor Clear liquid, yellow color.

10 STABILITY & REACTIVITY Chemical Stability Stable under normal conditions.

Conditions to Avoid Avoid strong oxidizing agents. Keep away from heat, sparks, or open flame.

Incompatibility This product may react with strong oxidizing agents.

Hazardous Decomposition Upon decomposition, this product may yield oxides of nitrogen and ammonia.

Hazardous Polymerization Will not occur.

11 TOXICOLOGICAL INFORMATION Carcinogenicity

Not available.

ACGIH - Threshold Limits Values - A4 - Not Classifiable as a

Carcinogens

IARC - Group 1 (Carcinogenic to

Humans)

OSHA - Hazard Communication

Carcinogens

Toxicology Data - Selected LD50s

and LC50s

Human Carcinogen Supplement 7, 1987

Present

Inhalation LC50 Rat: 72.6 mg/L/4H; Oral LD50 Rat: 4396

mg/kg; Dermal LD50 Rat: 12800 mg/kg; Dermal LD50

Rabbit: 12800 mg/kg

\_Isopropanol

67-63-0

12 ECOLOGICAL INFORMATION

Ecotoxicity

No data available on finished product.

Environmental Fate

This product is biodegradable.

13 DISPOSAL CONSIDERATIONS

Disposal Instructions

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations. Regulations may vary in different locations. Characterization and compliance with applicable laws are the responsibility solely of the generator.

14 TRANSPORT INFORMATION

DOT Proper Shipping Name Refer to bill of lading or

container label for DOT or other transportation hazard

classification, if any.

15 REGULATORY INFORMATION

U.S. Federal Regulations

CERCLA/SARA - Section 313 -

Emission Reporting

1.0 % de minimis

concentration (only if manufactured by the strong acid process, no supplier

notification)

TSCA (Toxic Substances Control Effective 12/15/86, Sunset Act) - Section 8(d) - 716.120(a) - 12/15/96

Health and Safety

\_Isopropanol

67-63-0

Ingredient Name

CAS Number Percent

Fatty acids, soya, reaction products 68605-27-6 with diethylenetriamine, ethoxylated,

di-Me sulfate-quaternized

67-63-0 10 %

90 %

State Regulations

\_Isopropanol

This product may contain the following ingredient(s) known to the State of California to cause cancer, birth defects or other

reproductive harm:1,4-Dioxane (CAS RN: 123-91-1)

Inventories

All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (N\_DSL), Korea (ECL),

16 OTHER INFORMATION

Completed On 01/09/07

Completed By Product Safety & Compliance

HAZARD RATINGS	HMIS	NFPA
Health	1	1
Flammability	3	3
Reactivity	,0	0
PPE	X	

OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

CONTACT: MSDS COORDINATOR UNIVAR USA INC.  DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400
******* UNIVAR USA INC ("UNIVAR") EXPRESSLY DISCLAIMS
ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED HEREIN,
AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.**
DO NOT USE INGREDIENT INFORMATION AND/OR INGREDIENT PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND UNIVARS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

\*\*\* END OF MSDS \*\*\*



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

FACILITY INFORMATION
COMMON NAME  COMMO
CHEMICAL NAME
CHEMICAL NAME
COMMON NAME  COMMON NAME  CAS # 64 - 19 - 7 10 FIRE CODE HAZARD CLASSES (supplied by GGFD)  TYPE (Cincal door from only)  TYPE (Cincal door from only)  a. PURE  AND MAXIMUM DAILY  AMOUNT  AND MAXIMUM DAILY  AMOUNT  AVERAGE DAILY  AMOUNT  19 MAXIMUM DAILY  AMOUNT  10 FIED HAZARD  CATEGORIES  11 RADIOACTIVE  12 N. FIED HAZARD  CATEGORIES  18 OLI BAG N. O. 15 CURIES  18 OLI BAG N. O. 15 CURIES  19 ARXIMUM DAILY  AMOUNT  19 MAXIMUM DAILY  AMOUNT  19 MAXIMUM DAILY  AMOUNT  19 MAXIMUM DAILY  AMOUNT  19 MAXIMUM DAILY  55 20 ANNUAL WASTE AMOUNT  10 LARGEST CONTAINER  11 LARGEST CONTAINER  12 TANK WASTE  12 TANK WASTE  13 DAYS ON SITE  14 RADIOACTIVE  15 LARGEST CONTAINER  16 LARGEST CONTAINER  17 LARGEST CONTAINER  18 TAME SECRET  19 MAXIMUM DAILY  19 MAXIMUM DAILY  AMOUNT  10 LARGEST CONTAINER  11 LARGEST CONTAINER  12 LARGEST CONTAINER  13 LARGEST CONTAINER  14 LARGEST CONTAINER  15 LABOVE AMBIENT  15 LORGES DAILY  16 LARGEST CONTAINER  17 LARK WASTE  18 No. 0 15 CURIES  18 LORGEST CONTAINER  10 LARGEST CONTAINER  11 LARGEST CONTAINER  12 LARGEST CONTAINER  13 LARGEST CONTAINER  14 LARGEST CONTAINER  15 LARGEST CONTAINER  16 LARGEST CONTAINER  17 LARK WASTE  18 NO. 0 15 CURIES  18 LORGES DAILY  19 LARGEST CONTAINER  10 LARGEST CONTAINER  10 LARGEST CONTAINER  11 LORGES DAILY  12 LARGEST CONTAINER  13 LARGEST CONTAINER  14 LARGEST CONTAINER  15 LARGEST CONTAINER  16 LARGEST CONTAINER  17 LARK WASTE  18 LORGEST CONTAINER  18 LORGEST CONTAINER  19 LARGEST CONTAINER  10 LARGEST CONTAINER  11 LARGEST CONTAINER  12 LARGEST CONTAINER  12 LARGEST CONTAINER  18 LARGEST CONTAINER  18 LARGEST CONTAINER
COMMON NAME  COMMON NAME  CAS # 64 - 19 - 7
CAS # 64-19-7 10 FIRE CODE HAZARD CLASSES (supplied by GGFD)  TYPE (Check one from only)    a. PURE   b. MIXTURE   c. WASTE   14   RADIOACTIVE   Yes   No   15   CURIES   16
TYPE (Check one Rem cell)    A PURE   D. MIXTURE   C. WASTE   14   RADIOACTIVE   Yes   D. No.   15   CURIES   16
PHYSICAL STATE   a. SOLID
CATEGORIES    d. ACUTE HEALTH   e. CHRONIC HEALTH     AVERAGE DAILY AMOUNT   55   20   ANNUAL WASTE AMOUNT   21   STATE WASTE CODE   11   MAXIMUM DAILY AMOUNT   25   STATE WASTE CODE   12   STATE WASTE CODE   12   STATE WASTE CODE   13   STATE WASTE CODE   14   STATE WASTE CODE   15   STATE WASTE CODE   16   STATE WA
AVERAGE DAILY
AMOUNT  UNITS  a. GALLONS  c. POUNDS  d. TONS  "If EHS, amount must be in pounds.  STORAGE CONTAINER  c. TANK INSIDE BLDG  d. TONS  G. TANK INSIDE BLDG  d. TONS  I. NONMETALLIC DRUM  I. FIBER DRUM  II. BAG(S)  D. LUNDERGROUND TANK  G. TANK INSIDE BLDG  G. TANK INSIDE BLDG  G. TANK INSIDE BLDG  G. METAL CONTAINER  II. BAG(S)  D. IN MACH OR EQUIP  II. BOX(S)  STORAGE PRESSURE  A. AMBIENT  D. ABOVE AMBIENT  C. BELOW AMBIENT
STORAGE CONTAINER   a. ABOVEGROUND TANK   e. PLASTIC DRUM   i. VAT   m CYLINDER   q. TANK WAGON   26   (Check all that apply)   b. UNDERGROUND TANK   f. NONMETALLIC DRUM   I. FIBER DRUM   n. GLASS CONTAINER   s. TOTE BINDER   s. TOTHER   s. TOTHE
Check all that apply    b. UNDERGROUND TANK   f. NONMETALLIC DRUM   I. FIBER DRUM   n. GLASS CONTAINER   f. RAIL CAR   c. TANK INSIDE BLDG   g. METAL CONTAINER   I. BAG(S)   p. PLASTIC CONTAINER   s. TOTE BIN-
STORAGE PRESSURE .
STORAGE TEMPERATURE AMBIENT
CAS#
1 50-809 Acetic Acid 30 □ Yes 12 No 31 64-19-7 32
2 20-5029 Water 30 Tyes \$1 No 31 722 18-5 32
3 29 30 Yes No 31 32
4 29 30 Yes No 31 32
5 29 30 Yes No 31 32
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.
PLACARDING INFORMATION
UNDOT # UNDOT # Refer to shipping papers or MSDS  NFPA 704 HAZARD DIAMOND FIRE (RED)
DOT HAZARD CLASS CONSINE  Refer to shipping papers or MSDS  REACTIVE (BLUE)  REACTIVE (YELLOW)  REACTIVE (YELLOW)
EPCRA YES NO 35
X MAKE AS MANY COPIES OF CHEMICAL  If EPCRA, Please Sign Here 36 INVENTORY FORM AS NEEDED

MATERIAL SAFETY DATA SHEET ACETIC ACID, SOLUTION (50% - 80%)

Section 01 Identification 

HAZARD DATA ACGIH (TWA) O

OSHA (TWA) 10 PPM 10 PPM N/A 64-19-7 7732-18-5 ACETIC ACID N/A WATER

Section 02 Physical Data \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

BOILING POINT: 220 F - 244 F MELTING POINT: N.D VAPOR PRESSURE: 17 MMHG @ 20 C VAPOR DENSITY (AIR = 1): >1 SOLUBILITY IN WATER: COMPLETELY POUR POINT: NOT APPLICABLE

SPECIFIC GRAVITY: 1.057 - 1.07 (@ 20 C)
ODOR/ APPEARANCE: CLEAR, COLORLESS LIQUID WITH A STRONG VINEGAR-LIKE ODOR
FREEZING POINT: -4 F TO 19 F

Section 03 Fire And Explosion Hazard Data

FLASH POINT: N.D UPPER FLAMMABILITY LIMIT: N.D. LOWER FLAMMABILITY LIMIT: N.D.

BASIC FIREFIGHTING PROCEDURES:
USE WATER SPRAY, DRY CHEMICAL, ALCOHOL FOAM, ALL PURPOSE AFFF OR CARBON
DIOXIDE TO EXTINGUISH FIRE. USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS,
STRUCTURES AND TO PROTECT PERSONNEL. IF LEAK OR SPILL HAS NOT IGNITED,
VENTILATE AREA AND USE WATER SPRAY TO DISPERSE GAS OR VAPOR AND TO PROTECT
PERSONNEL ATTEMPTING TO STOP LEAK. USE WATER TO DILUTE SPILLS AND TO FLUSH
THEM AWAY FROM SOURCES OF IGNITION. DO NOT FLUSH DOWN PUBLIC SEWERS OR OTHER
DRAINAGE SYSTEMS. EXPOSED FIREFIGHTERS MUST WEAR MSHA/NIOSH APPROVED POSITIVEPRESSURE. SELF-CONTAINED BREATHING APPARATUS WITH FULL FACE MASK AND FULL BASIC FIREFIGHTING PROCEDURES: PRESSURE, SELF-CONTAINED BREATHING APPARATUS WITH FULL FACE MASK AND FULL PROTECTIVE CLOTHING.

USUAL FIRE AND EXPLOSION HAZARDS: DANGEROUS WHEN EXPOSED TO HEAT OR FLAME, RUNOFF TO SEWER MAY CAUSE FIRE OR EXPLOSION HAZARD, CONTAINERS MAY EXPLODE IN HEAT OR FIRE, IRRITATING OR TOXIC SUBSTANCES MAY BE EMITTED UPON TERMAL DECOMPOSITION.

Section 04 Reactivity Data \*\*\*\*\*\*\*\*\*\*\* STABLE UNDER CONDITIONS OF NORMAL USE. AVOID CONTACT WITH OXIDIZERS AND REDUCING AGENTS.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS: IRRITATING AND TOXIC FUMES MAY BE EMITTED UPON DECOMPOSITION. COMBUSTION MAY

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2

MATERIAL SAFETY DATA SHEET ACETIC ACID, SOLUTION (50% - 80%)

PRODUCE CO AND CO2. REACTIONS WITH METALS MAY PRODUCE HYDROGEN GAS. CAN BE DANGEROUSLY REACTIVE WITH STRONG ACIDS OR OXIDIZING AGENTS.

Section 05 Spill, Leak And Disposal Procedures

ACCIDENTAL RELEASE MEASURES: KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY ENTRY. STAY UPWIND; KEEP OUT OF LOW AREAS (ALSO SEE SECTION 9- PERSONAL PROTECTION SECTION). DO NOT TOUCH OR WALK THROUGH SPILLED MATERIAL; STOP LEAK IF YOU CAN DO IT WITHOUT RISK.

SMALL SPILLS: TAK UP WITH SAND OR OTHER NON-COMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL.

SMALL DRY SPILLS: SHOVEL INTO CLEAN, DRY CONTAINERS AND COVER LOOSELY; MOVE CONTAINERS FROM SPILL AREA.

LARGE SPILLS: DIKE PAR AHEAD OF LIQUID SPILL FOR LATER DISPOSAL.

DISPOSAL CONSIDERATIONS:
THIS SUBSTANCE, WHEN DISCARDED OR DISPOSED OF, IS NOT SPECIFICALLY LISTED AS
A HAZARDOUS WASTE IN FEDERAL REGULATIONS; HOWEVER IT COULD BE CHARACTERISTICALLY HAZARDOUS IF IT IS CONSIDERED TOXIC, CORROSIVE, IGNITABLE, OR
ISTICALLY HAZARDOUS IF IT IS CONSIDERED TOXIC, CORROSIVE, IGNITABLE, OR
REACTIVE ACCORDING TO FEDERAL DEFINITIONS (40 CFR 261). ADDITIONALLY, IT
REACTIVE ACCORDING TO FEDERAL DEFINITIONS (50 CFR 261). ADDITIONALLY, IT
REACTIVE ACCORDING TO FEDERAL DEFINITIONS. THIS
SUBSTANCE COULD ALSO BECOME A HAZARDOUS WASTE IF IT IS MIXED WITH OR COMES IN
CONTACT WITH A HAZARDOUS WASTE. CHECK 40 CFR 261 TO DETERMINE WHETHER IT IS A
CONTACT WITH A HAZARDOUS WASTE. CHECK 40 CFR 261 TO DETERMINE WHETHER IT IS A
HAZARDOUS WASTE. IF IT IS A HAZARDOUS WASTE, REGULATIONS AT 40 CFR 262, 263,
HAZARDOUS WASTE. IF IT IS A HAZARDOUS WASTE, REGULATIONS AT 40 CFR 262, 263,
142 CFR 268 AND 270 APPLY. CHEMICAL ADDITIONS, PROCESSING AND OTHERWISE ALTERING
264, 268 AND 270 APPLY. CHEMICAL ADDITIONS, PROCESSING AND OTHERWISE ALTERING
THIS MATERIAL MAY MAKE THE WASTE MANAGEMENT INFORMATION PRESENTED IN THIS MSDS
THIS MATERIAL MAY MAKE THE WASTE MANAGEMENT INFORMATION PRESENTED IN THIS MSDS
INCOMPLETE, INACCURATE OR OTHERWISE INAPPROPRIATE. THE TRANSPORTATION,
STORAGE, TREATMENT AND DISPOSAL OF THIS WASTE MATERIAL MUST BE CONDUCTED IN
STORAGE, TREATMENT AND DISPOSAL OF THIS WASTE AND LOCAL REGULATIONS.

EYE CONTACT: EXTEMELY IRRITATING AND CORROSIVE. DIRECT CONTACT MAY CAUSE CONJUNCTIVITIS, REDNESS, PAIN, BLURRED VISION, CONJUNCTIVAL AND CORNEAL DESTRUCTION AND PERMANENT INJURY.

SKIN CONTACT: EXTREMELY IRRITATING AND CORROSIVE. CONTACT MAY CAUSE REDDENING, ITCHING, OR YELLOWISH STAINS ON THE SKIN. READILY ABSORBED THROUGH THE SKIN.

INHALATION:
MAY CAUSE SEVERE IRRITATION TO THE RESPIRATORY TRACT. EXPOSURE TO FUME OR
MIST MAY CAUSE CHEMICAL PNEUMONITIS, BRONCHITIS AND PULMONARY EDEMA. SEVERE
EXPOSURE MAY RESULT IN LUNG TISSURE DAMAGE AND CORROSION OF THE MUCOUS
MEMBRANES. CHRONIC EXPOSURE MAY PRODUCE EROSION OF THE TEETH AND JAW NECROSIS.

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MATERIAL SAFETY DATA SHEET ACETIC ACID, SOLUTION (50% - 80%)

INGESTION: MODERATELY TOXIC. CORROSIVE. MAY CAUSE BURNING PAIN OF THE MOUTH, THROAT AND ABDOMINAL SPASMS, VOMITTING, HEMATEMESIS AND DIARRHEA. MAY ALSO CAUSE HEMATURIA, ALBUMINURIA, NEPHROSIS, ASPHYXIA AND DEATH.

SPECIAL TOXIC EFFECTS: MUTAGENIC IN NON-MAMMALIAN TEST SYSTEMS. ANIMAL STUDIES INDICATE THAT ACETIC ACID MAY BE EXCRETED IN BREAST MILK OF NURSING RATS AND RESULT IN BEHAVIORAL ABNORMALITIES IN THE OFFSPRING.

Section 07 First Aid Procedures And Physician Notes

FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. EYELIDS SHOULD BE HELD AWAY FROM THE EYEBALL TO ENSURE THOROUGH RINSING. GET IMMEDIATE MEDICAL ATTENTION.

REMOVE CONTAMINATED CLOTHING IMMEDIATELY. WASH AREA OF CONTACT THROROUGHLY WITH SOAP AND WATER. GET IMMEDIATE MEDICAL ATTENTION. DISCARD CONTAMINATED CLOTHING AND LEATHER GOODS. SKIN:

REMOVE EXPOSED PERSON FROM SOURCE OF EXPOSURE. IF NOT BREATHING, ENSURE CLEAR AIRWAY AND INSTITUTE CARDIOPULMONARY RESUSCITATION (CPR). IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. GET IMMEDIATE MEDICAL ATTENTION. INHALATION:

INGESTION: DO NOT INDUCE VOMITTING. IF VICTIM IS CONSCIOUS, GIVE 1-3 GLASSES OF WATER OR MILK TO DILUTE STOMACH CONTENTS. KEEP AFFECTED PERSON WARM AND AT REST. GET IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN: INHALATION - DELAYED PULMONARY EDEMA MAY OCCUR, AND PATIENT SHOULD BE MAINTAINED UNDER OBSERVATION FOR THIS COMPLICATION.

INGESTION- THE AGENT IS AN ACID CORROSIVE AND PRODUCED COAGULATIVE NECROSIS OF THE BUCCAL CAVITY, ESOPHAGUS AND STOMACH. THE MAJOR CAUSES OF DEATH ARE CIRCULATORY SHOCK, ASPHYXIA DUE TO GLOTTIC OR LARYNGEAL EDEMA, PERFORATION OF THE ESOPHAGUS OR STOMACH, WHILE TREAMENT OF ACUTE INGESTIONS IS CONTRAVERSIAL, INDUCTION OF EMESIS AND USE OF CARBON DIOXIDE PRODUCING ANTI-ACIDS ARE CONTRAINDICATED, NASAL GASTRIC INTUBATION SHOULD BE UNDERTAKEN ONLY WITH THE RISHK OF PERFORTION RECOGNIZED IN CONTRAST TO THE ESPHAGEAL, GASTRIC OR PYLORIC STENOSIS.

Section 08 Special Handling Information \*\*\*\*\*\*\* PERSONAL PROTECTION EQUIPMENT (PPE)

EYE PROTECTION: WEAR CHEMICAL SAFETY GOGGLES AND FACE SHELLD. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH THIS SUBSTANCE. HAVE EYE WASHING FACILITIES READILY AVAILABLE WHERE EYE CONTACT CAN OCCUR.

SKIN PROTECTION:

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BRENNTAG PACIFIC, INC. 10747 PATTERSON PLACE SANTA FE SPRINGS, CA 90670 PHONE#... (562)903-9626 MSDS#... 8419 11/17/04 PAGE

MATERIAL SAFETY DATA SHEET ACETIC ACID, SOLUTION (50% - 80%)

WEAR GLOVES AND PROTECTIVE CLOTHING TO PREVENT SKIN CONTACT, SUGGESTED PROTECTIVE MATERIALS ARE: NEOPRENE. PROVIDE SAFETY SHOWERS AT ANY LOCATION WHERE SKIN CONTACT CAN OCCUR.

RESPIRATORY PROTECTION:
IF EXPOSURE LIMITS ARE EXCEEDED OR IF IRRITATION IS EXPERIENCED, NIOSH APPROVED RESPIRATORY PROTECTION SHOULD BE WORN. NORMALLY, A NIOSH APPROVED RESPIRATORY FOR ORGANIC VAPORS IS GENERALLY ACCEPTABLE. FOR HIGH CONCENTRATIONS AND FOR OXYGEN-DEFICIENT ATMOSPHERES, USE A NIOSH APPROVED AIR SUPPLIED RESPIRATOR. VENTILATION AND OTHER FORMS OF ENGINEERING CONTROLS ARE OFTEN THE PREFERRED MEANS FOR NON-ROUTINE OR EMERGENCY SITUATIONS.

HMIS RATINGS: HEALTH: 3 FLAMMABILITY: 2 REACTIVITY: 0 NFPA RATINGS: HEALTH: 3 FLAMMABILITY: 2 REACTIVITY: 0

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



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

☐ ADD ☐ DELETE  REVISED 1		F	Page 3 of 19	_ 2
FACILITY ID#. 3 0 0 3 5	hFriendlyi	Voducto	News labs	17/2
	NFORMATION	101100013		
1260) Manurch St. Cover	Grando C	Δ 9	7 <b>9</b> 41	.4
CONFIDENTIAL LOCATION Yes No 5 MAP#	- ID RE	6 GRID#		7
	INFORMATION			
CHEMICAL NAME	WASTE Yes	8 TRADE SE	CRET Yes No	11
COMMON NAME	1	9 An EHS Ch	CRA see instructions nemical Yes No	12
CAS# 10 FIRE CODE HAZARD CLASSES (supplied by	GGFD)	°If EHS is "	Yes", all amounts must be LBS	13
1310-73-2				
TYPE (Check one Remontly)  a. PURE  b. MIXTURE  c. WASTE	14 RADIOACTIVE YE			16
	TEGORIES a. FIRE	b. REACTIVE	. PRESSURE RELEASE	
AVERAGE DAILY JOO 19 MAXIMUM DAILY 200 20 AMOUNT 20	ANNUAL WASTE AMOUNT	<b>A</b> 21 STA	TE WASTE CODE	22
UNITS a. GALLONS b. CUBIC FEET 23 DAYS ON SITE  C. POUNDS d. TONS "If EHS, amount must be in pounds.	365°	LARGEST CONT	TAINER 50	25
STORAGE CONTAINER    a. ABOVEGROUND TANK   e. PLASTIC DRUM   f. NONMETALLIC DRUM   f. NONMETALLIC DRUM   g. METAL CONTAINER   d. STEEL DRUM   h. CARBOY	I. FIBER DRUM	m CYLINDER  n. GLASS CONTAINI 0 PLASTIC CONTAIN p. IN MACH OR EQU	NER s. TOTE BIN	26
STORAGE PRESSURE a. AMBIENT D. ABOVE AM	NENT C. BELO	W AMBIENT		27
STORAGE TEMPERATURE . AMBIENT . b. ABOVE AM		W AMBIENT	d. CRYOGENIC	28
%WT HAZARDOUS COMPONENT (For mixture o	waste only)	EHS	CAS#	
196-100 Sodium Hydroxide	30	es 📜 No	31 1310-73-8	32
2 1-4 29 Water	30 🗆 1	es 🗷 No	31 <b>7732-18-</b>	5 32
3 29 1	1			
	30 🗀 Y		31	32
4 29	30 DY	es 🗌 No	31	32
4 29 5 29 5 29 F T T T T T T T T T T T T T T T T T T	30 🗆 Y	es No	31	
4 29	30 Y	es No	31	32
4 29 5 29 If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by PLACARDING I	30 Y	es No es No dional sheets of paper	31 31 capturing the required information.	32
4 29  5 29  H more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by PLACARDING I	30 Y 30 Y weight if carcinogenic, attach addi NFORMATION 3	es No es No tional sheets of paper NFPA 704 HAL FIRE (RED) SPECIAL SPECIAL	31 31 capturing the required information.  ZARD DIAMOND  REACTIVE (YELLOW)  WHITE	32
4 29  5 29  If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by PLACARDING I  UNDOT # Refer to shipping papers or MSDS  DOT HAZARD CLASS Corrosive Refer to shipping papers or MSDS	30 Y 30 Y weight if carcinogenic, attach addi NFORMATION 3	es No es No tional sheets of paper NFPA 704 HA FIRE (RED)	31 31 capturing the required information.  ZARD DIAMOND  REACTIVE (YELLOW)	32



### **MATERIAL SAFETY DATA SHEET**

# 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:

Pels® Caustic Soda Beads

Product ID:

0040

SYNONYMS:

Sodium Hydroxide; Anhydrous Sodium Hydroxide, Caustic Soda; NaOH

ISSUE DATE:

....08/30/2005

**EDITION NO.:** 

16

PPG Industries, Inc.
One PPG Place, Pittsburgh, PA 15272, USA
24-hour Emergency Telephone Number: 1-412-434-4515
For Product Information (8am-5pm Eastern time):
1-800-243-6774 (C/A)

PREPARER:

Product Safety, Chemicals

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDS IDENTIFICATION

Material/CAS Number

Percent

Sodium Hydroxide

96-100

1310-73-2

90-100

Water

balance

7732-18-5

### \_\_\_\_\_\_

3.

#### **EMERGENCY OVERVIEW:**

DANGER! Corrosive - Causes severe burns to eyes and skin. May cause irreversible eye damage. Inhalation of dust is highly irritating and possibly corrosive to the upper respiratory tract. Harmful or fatal if inhaled. Harmful or fatal if swallowed.

Environmental Hazard -- This product is toxic to fish. Keep out of lakes, streams, ponds, or other waters.

Precautions: Do not get in eyes, on skin, or on clothing. Corrosive to skin. Even a small amount in the eye can cause blindness. Do not breathe dust or mists from solutions. Use only with adequate ventilation. Ventilation must be sufficient to limit employee exposure to this product below permissible exposure limits. Do not swallow. When making solutions or diluting, only add caustic soda slowly to surface of cold water while stirring. Do not add to warm or hot water, a violent eruption or explosive

reaction can result. Avoid contact with organic materials and concentrated acids - may cause violent reactions. Caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Wash thoroughly after handling. Remove and wash contaminated clothing before reuse. Do not eat, drink or smoke in work area.

#### 4. FIRST AID MEASURES

**INHALATION:** Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

EYE/SKIN CONTACT: EYE: Remove contact lens and pour a gentie stream of warm water through the affected eye for at least 15 minutes. Contact a poison control center, emergency room or physician right away as further treatment will be necessary. SKIN: Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

**INGESTION:** Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do Not induce vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

#### 5. FIRE-FIGHTING MEASURES

FLASH POINT: None

**EXTINGUISHING MEDIA:** Not applicable.

SPECIAL FIREFIGHTING PROCEDURES: Contact with some metals (particularly magnesium, aluminum and galvanized zinc) can rapidly generate hydrogen, which is explosive. Emits toxic fumes under fire conditions. Fire-fighters must wear NIOSH approved pressure demand, self-contained breathing apparatus and full protective clothing when fighting chemical fires.

## 6. ACCIDENTAL RELEASE MEASURES

#### ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Only trained personnel equipped with NIOSH approved, full facepiece combination dust/mist respirators should be permitted in area. For dry material, use appropriate methods, shovels, brooms, and vacuums to clean up the spill. If mixed with water, or likely to become mixed with water or any liquid, dike area to contain spill. Reclaim if possible. Or, dilute spill with large amounts of water then neutralize with dilute acid. Use vacuum truck to pick up neutralized material for proper disposal. Properly neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions. After all visible traces have been removed, flush area with large amounts of water.

#### 7. HANDLING AND STORAGE

PPG:

0040 Pels® Caustic Soda Beads

08/30/2005

### PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:

Wear appropriate personal protective equipment when handling this product. Never touch eyes or face with hands or gloves that may be contaminated with this product. When making solutions or diluting, only add caustic soda slowly to surface of cold water while stirring. Do not add to warm or hot water, a violent eruption or explosive reaction can result. Avoid contact with organic materials and concentrated acids - may cause violent reactions. Caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Follow appropriate tank entry procedures (see ANSI Z117.1 - 2003 Safety Requirements for Confined Spaces). Do not enter a storage tank or container (truck or rail) that has contained this product, even if it appears empty. Store in a cool, dry, well-ventilated place. Store indoors. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

8-hour Time Weighted Average (TWA); 15-minute Short-Term Exposure Limit (STEL)

OSHA: The OSHA exposure limit(s) for Sodium Hydroxide: 2 mg/m³ Ceiling.

ACGIH: The ACGIH exposure limit(s) for Sodium Hydroxide: 2 mg/m3 Ceiling.

ONTARIO: The Ontario Exposure limit(s) for Sodium Hydroxide: 2 mg/m³CEV

**RESPIRATORY PROTECTION:** Where the potential for exposure exists use the appropriate regulatory compliant particulate filter respirator with full facepiece. Carefully read and follow the respirator manufacturer's instructions and information.

**VENTILATION:** Use local exhaust sufficient to maintain dust/mist levels below permissible exposure limits.

EYE AND FACE PROTECTION: Close fitting chemical safety goggles with faceshield.

PROTECTIVE GLOVES: Nitrile. Neoprene. Natural rubber.

OTHER PROTECTIVE EQUIPMENT: Boots, aprons, or chemical suits should be used when necessary to prevent skin contact.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** 

Vapor Density (Alr=1):

Non-volatile

Specific Gravity (Water=1):

\_\_\_\_2.130

FREEZING/MELTING POINT: 590-608°F (310-320°C)

...Strongly basic

SOLUBILITY (wt.% in water):

347g/100g water @ 100°C

PPG: 0040 Pels® Caustic Soda Beads 08/30/2005

Bulk Density (kg/M3): 70 lbs/cu.ft. (loose)

VOLUME % VOLATILE:

VAPOR PRESSURE:

Evaporation Rate:

HEAT OF SOLUTION:

Non-volatile

Exothermic

Physical State: Solid Beads
Odor: Odorless

COLOR: White to Off-White

# 10. STABILITY AND REACTIVITY

Stability:

Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

## INCOMPATIBILITY (CONDITIONS/MATERIALS TO AVOID):

Contact with organic materials and concentrated acids may cause violent reactions. Contact with magnesium, aluminum, galvanized zinc, tin, chromium, brass and bronze generates explosive hydrogen. Reactions with various food sugars may form carbon monoxide. Reacts exothermically on contact with water.

# HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS:

Oxides of sodium.

# 11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION LC50: Corrosive SKIN IRRITATION: Corrosive. EYE IRRITATION: Corrosive. ACUTE ORAL LD50: Corrosive.

CARCINOGENICITY STATUS: This product is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, ACGIH, or OSHA.

MEDICAL CONDITIONS AGGRAVATED: None known.

# **EFFECTS OF OVEREXPOSURE:**

### ACUTE:

Eye/Skin: Causes severe burns to the eyes. Small quantities can result in permanent damage and/or loss of vision. For skin contact, corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Dust or mist from solutions can cause irritant dermatitis.

Ingestion: Ingestion either in solid or liquid form can cause very serious damage to the mucous membranes or other tissues with which contact is made, and may be fatal.

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Inhalation: Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild imitation of mucous membranes, severe pneumonitis and destruction of lung tissues.

CHRONIC: The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures.

> 12. ECOLOGICAL INFORMATION

# **ECOTOXICOLOGICAL INFORMATION:**

240 ug/l (Bluegill) 96-hour TLM LC50. Highly toxic to aquatic life.

# **ENVIRONMENTAL FATE:**

No data at this time.

#### 13. DISPOSAL CONSIDERATIONS

### DISPOSAL METHOD:

Waste material must be disposed of in accordance with federal, state, provincial, and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility,

#### 14. TRANSPORT INFORMATION

Proper Shipping Name:

.... Sodium Hydroxide, Solid

Hazard Class:

. .... 8 (Corrosive)

**UN Number:** 

. UN1823

Packing Group: . . . . .

USA-RQ, Hazardous Substance and Quantity:

...... 1000 lbs./454 kg (sodium

hydroxide 1310-73-2)

Marine Pollutant:

None

Additional Information:

USA Shipments Only - Hazardous Substances are

regulated in the USA when shipped above their Reportable Quantity (RQ).

#### 15. REGULATORY INFORMATION

USA TSCA: All components of this product are listed on the TSCA Inventory.

EU EINECS: All components in this product are listed on EINECS or meet the polymer definition. CANADA DOMESTIC SUBSTANCES LIST (DSL): This product and/or all of its components are listed on the Canadian DSL.

AUSTRALIA AICS: All components of this product are listed on AICS.

KOREA ECL: All components in this product are listed on the Korean Existing Chemicals Inventory (KECI).

JAPAN MITI (ENCS):

All components in this product are listed on the

Japanese Existing and New Chemical Substances (ENCS) chemical inventory.

PHILIPPINES PICCS:

All of the components in this product are listed

on the Philippines Inventory of Chemicals and Chemical Substances (PICCS).

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CHINA IECSC: All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or otherwise exempt.

SARA TITLE III:

SARA (311, 312) Hazard Class:

Acute Health Hazard. Reactive Hazard.

SARA (313) Chemicals:

Not listed.

SARA Extremely Hazardous Substance:

Not listed.

# **CERCLA Hazardous Substance:**

The following materials are listed as CERCLA Hazardous Substances in Table 302.4 of 40 CFR Part 302: Sodium Hydroxide (1310-73-2) RQ = 1000 lbs./454 kg.

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.

CANADA REGULATIONS (WHMIS): Class E - Corrosive Material.

16.

OTHER INFORMATION

### Other Information:

NSF/ANSI Drinking Water Treatment Chemicals - Health Effects Listing - PPG Pels® Caustic Soda Beads are certified for maximum use at 100 mg/l under NSF/ANSI Standard 60.

In case of emergency in Canada, contact PPG Canada, Inc., B.P.2010, Beauharnois, Quebec J6N 3C3, 450-429-3552, or Canutec 613-996-6666.

The following has been revised since the last issue of this MSDS:

Date. Edition. Section 4 has been updated. Section 8 has been updated. Section 9 has been updated. Section 14 has been updated. Section 15 has been updated.

Previous revision date:

3/18/2005

Previous edition number:

015

NA = Not Available



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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\* Univar USA

012 06/05/07 TECHNICAL GRADE D-LIMONENE

PRODUCT NAME: TECHNICAL GRADE D-LIMONENE

MSDS NUMBER: P12355VS

DATE ISSUED: 05/01/2006

SUPERSEDES: 11/01/2004

ISSUED BY: 005084

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: TECHNICAL GRADE D-LIMONENE

Product Code: 301000

Synonyms: Citrus Stripper Oil, Terpene Hydrocarbons

Manufacturer:

Florida Chemical Company 351 Winter Haven Blvd., NE Winter Haven, FL 33881-9432

(863) 294-8483 .

(9:00 A.M. to 5:00 P.M. Eastern)

For emergencies, call Chemtrec anytime at 1-800-424-9300. Outside US, call Chemtrec Collect at 703-527-3887.

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview

Appearance/Odor: Colorless to pale yellow liquid with citrus aroma.

Product is Combustible.

Slippery when spilled.

Potential Health Effects: See Section 11 for more information.

Likely Routes of Exposure: Eye contact, skin contact, inhalation.

Eye: Causes moderate to severe irritation.

Skin: May cause slight redness. Prolonged or repeated exposure may cause drying of the skin.

Inhalation: May cause nose, throat, and respiratory tract irritation, coughing, headache.

Ingestion: Not likely to be toxic, but may cause vomiting, headache, or other medical problems.

Medical Conditions Aggravated By Exposure: May irritate the skin of people with pre-existing skin conditions.

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC, ACGIH or NTP.

OSHA Regulatory Status
This material is combustible, which is defined as having a flash point
between 100 deg F (37.8 deg C) and 200 deg F (93.3 deg C). Combustible

materials are hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component Cartrus Terpenes 94

CAS # % by Wt. 94266-47-4 100

SECTION 4: FIRST AID MEASURES

Eye Contact: Remove contact lenses at once. Flush with water for at least 15 minutes. If irritation persists, seek medical attention.

Skin Contact: Wash affected area with copious amounts of soap and water. If irritation develops, seek medical attention.

Inhalation: If symptoms of overexposure are experienced, move to fresh air. If symptoms persist. seek medical attention.

Ingestion: Seek medical attention immediately. DO NOT induce vomiting. Rinse mouth with water. DO NOT administer anything by mouth to an unconscious person. DO NOT leave victim unattended.

General: As with any chemical, employees should thoroughly wash hands with soap and water after handling this material.

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Carbon dioxide, foam or dry chemical. Caution: Carbon dioxide will displace air in confined spaces and may create an oxygen deficient atmosphere.

Unsuitable Extinguishing Media: Water.

Products of Combustion: Forms acrid fumes, carbon monoxide, and carbon dioxide.

Protection of Firefighters: Vapors may be irritating to eyes, skin and respiratory tract. Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8. Product is slippery when spilled. Isolate the hazard area. Deny entry to unnecessary and unprotected personnel.

Environmental Precautions: Keep out of drains, sewers, ditches and waterways.

Methods for Containment: Dike spill area and cap leaking containers as necessary to prevent further spreading of spilled material. Absorb spilled liquid with suitable material such as dirt or sand.

Methods for Clean Up: Eliminate all ignition sources. Use equipment rated for use around combustible materials. Oil soaked rags may spontaneously combust; place in appropriate disposal container.

Other Information: There are no special reporting requirements for spills of this material.

SECTION 7: HANDLING AND STORAGE

Handling

Keep away from heat, sparks, and flame. Open container slowly to release pressure caused by temperature variations. Do not allow this material to come

in contact with eyes. Avoid prolonged contact with skin. Use in well ventilated areas. Do not breathe vapors. Drum lining may occasionally chip and fall to the bottom of container; product should be filtered or strained before blending or repackaging. As with any chemical, employees should thoroughly wash hands with soap and water after handling this material.

Storage

Product may be packaged in phenolic-lined steel containers or fluorinated plastic containers. Store in well ventilated area with proper sprinkler/fire deterrent system. Storage temperature should not exceed the flash point for extended periods of time. Keep container closed when not in use. Air should be excluded from partially filled containers by displacing with nitrogen or carbon dioxide. Do not cut, drill, grind or weld on or near this container; residual vapors may ignite.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

d-Limonene

8h TWA=30 ppm (AIHA Standard)

TWA Time Weighted Average

Engineering Controls: Provide ventilation. Keep away from sparks and flames.

Eye/Face Protection: Wear safety glasses or goggles.

Skin Protection: Nitrile gloves are recommended. Boots, apron, or bodysuit should be worn as necessary.

Respiratory Protection: Not normally required. If adequate ventilation is unavailable, use NIOSH approved air-purifying respirator with organic vapor cartridge or canister.

General Hygiene Considerations: Wash hands thoroughly after handling. Have eyewash and emergency shower facilities immediately available. Launder contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color: Colorless to pale yellow.

Odor: Citrus aroma.

Physical State: Liquid.

Boiling Point: 349 deg F (176 deg C)

Melting Point: -140 deg F(-96 deg C), thickens at -108T(-78 deg C)

Specific Gravity: 0.838 to 0.843 @ 68 deg F (20 deg C)

Refractive Index: 1.471 to 1.474 Optical Rotation: +96 deg to +104'

Vapor Pressure: <2mmHg @ 68 deg F (20 deg C)

Flash Point (CCCFP): >110 deg F (43 deg C)

Flammable Limits: LEL approx. 0.7%, UEL approx. 6.1%

Autoignition

Temperature: 458 deg F (237 deg C)

Solubility in Water: Insoluble Evaporation Rate: 0.2(BuAc=1)

Volatile Organic Compound

(VOC) Content: >95% by volume.

Note: These specifications represent a typical sample of this product, but actual values may vary. Certificates of Analysis and Specification Sheets are available upon request.

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Conditions to Avoid: Keep away from heat, sparks and flames.

Incompatible Materials: Strong oxidizing agents and strong acids, including

acidic clays, peroxides, halogens, vinyl chloride, and iodine pentafluoride.

Hazardous Decomposition Products: Oxides of citrus terpenes, which can result from improper storage and handling, are known to cause skin sensitization.

Possibility of Hazardous Reactions: To prevent oxidation, avoid long-term exposure to air. If storing partially filled container, fill headspace with an inert gas such as nitrogen or carbon dioxide.

### SECTION 11: TOXICOLOGICAL INFORMATION

### Acute Effects

Citrus terpenes have been shown to have low oral toxicity (LD50>5 g/kg) and low dermal toxicity (LD50> 5g/kg) when tested on rabbits. Citrus terpenes also showed low toxicity by inhalation (RD50>1 g/kg) when tested on mice. The skin irritancy of limonene in guinea pigs and rabbits is considered moderate and low, respectively. Inhalation may cause irritation of the nose, throat, and respiratory tract.

### Chronic Effects

This product is not classified as a carcinogen by OSHA, IARC, ACGIH or NTP. This product has not been shown to produce genetic changes when tested on bacterial or animal cells. This product does not contain known reproductive or developmental toxins. Prolonged or repeated exposure can cause drying or dermatitis of skin. Improper storage and handling may lead to the formation of a possible skin sensitizer.

### SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: There is no information available at this time for this product. However, a spill may produce significant toxicity to aquatic organisms and ecosystems. Some studies have shown that certain bacteria and fungi have the ability to degrade terpenes, decreasing their toxicity to fish. When spilled, this product may act as an oil, causing a film, sheen, emulsion or sludge at or beneath the surface of a body of water.

Persistence/Degradability: Product is expected to be readily biodegradable.

Bioaccumulation/Accumulation: No appreciable bioconcentration is expected in the environment.

Mobility in Environment: Citrus terpenes volatilize rapidly.

### SECTION 13: DISPOSAL CONSIDERATIONS

Disposal: Incinerate or dispose of in accordance with Local, State, and Federal Regulations. Taking regulations into consideration, waste may be incinerated or handled through EPA Spill Control Plan via landfill or dilution. Commercially clean containers prior to disposal. Oil soaked rags should be disposed of properly to prevent spontaneous combustion.

### SECTION 14: TRANSPORT INFORMATION

US DOT Shipping Classification

Proper Shipping Name: TERPENE HYDROCARBONS, N.O.S

Hazard Class: 3

Identification No.: UN2319

Packing Group: III

Label/Placard: exception 173.150(f) applies.

TDG Status: Hazardous IMO Status: Hazardous IATA Status: Hazardous

The listed transportation classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptions.

SECTION 15: REGULATORY INFORMATION

Global Inventories

This product is included in the following inventories: USA (TSCA) Korea (KECL) Canada (DSL) Philippines (PICCS) Europe (EINECS/ELINCS/Polymer/NLP) Japan (ENCS)

Australia (AICS)

The United States FDA lists d-limonene as GRAS in 21 CFR section 182.20 and 182.6.

d-Limonene is a 100% natural, biodegradable product extracted from the peel of citrus fruit.

Proposition 65 - California Safe Drinking Water and Toxic Enforcement Act of 1986

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

SARA Title III (Section 313) This substance contains no materials subject to the reporting requirements of SARA Title III (Section 313).

SECTION 16: OTHER INFORMATION

NFPA 704: National Fire Protection Association Health 1 (slight hazard) Fire 2 (moderate hazard) Reactivity 0 (minimal hazard)

EINECS Number: 304-454-3

d-Limonene is the major component of citrus terpenes, with the balance consisting of other terpene hydrocarbons and oxygenated compounds - octanal, myrcene, alpha-pinene, linalool predominant. d-Limonene is a by-product of citrus, entirely of natural origin, and to the best of our knowledge contains no artificial flavors, sulfites, nitrites, or pesticide residue exceeding tolerances established by the FDA. d-Limonene does NOT contain lead, cadmium, mercury, or hexavalent chromium or come in contact with these chemicals since it is an citrus derived essential oil produced by steam/vacuum distillation. Further, d-Limonene is packaged in food grade containers with inert liners that do NOT contain lead, cadmium, mercury, or hexavalent chromium. Cl-Limonene does NOT contain and is NOT manufactured with any of the Class I or II ozone-depleting substances listed under the United States Clean Air Act of 1990.

### PACKAGING

d-Limonene is packaged in phenolic-lined containers as follows: 1-Gallon Pail 7 Pounds Net Weight 3.2 kg Net Weight 5-Gallon Pail 35 Pounds Net Weight 16 kg Net Weight 55-Gallon Drum 390 Pounds Net Weight 177 kg Net Weight

Drums are typically orange or black DOT approved steel drums coated with a phenolic resin liner. All drums of our domestic d-Limonene are filled to a net weight of 390 lbs. Dimensions of 55-gallon drums are: diameter 23" and height 35". Imported drums of Brazilian d-Limonene vary slightly in net weight - weight should be verified when ordering. Tank truck shipments average 6500 gallons (45,000 lbs.). Overseas ISO tank shipments are either 20,000 liters (16,800 kg) or 24,000 liters (20,160 kg). Sample quantities (gallons & pints) are packaged in fluorinated plastic containers or

Univar USA

glass (1 oz. samples).

## Legend

ACIGH American Conference of Governmental Industrial Hygienists

GRAS Generally Recognized as Safe

AIHA American Industrial Hygiene Association

IARC International Agency for Research on Cancer

BHT Butylated Hydroxytoluene

NIOSH National Institute for Occupational Safety and Health

EPA United States Environmental Protection Agency

NTP National Toxicology Program

FDA United States Food and Drug Administration

OSHA United States Occupational Health and Safety Administration

Caution: The user should conduct his/her own experiments and establish proper procedures and control before attempting use on critical parts.

ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED HEREIN,

AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.\*\*

DO NOT USE INGREDIENT INFORMATION AND/OR INGREDIENT PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND UNIVARS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

\* \* \* END OF MSDS \* \* \*



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

DEPART	
ADD DELETE REVISED 1	Page <u>5</u> of 19 2
FACILITY ID# 3 0 0 3 5	oks News Labs INC.3
I. FACILITY INFORMATION	CIST VEWIS LADS LINC.
CHEMICAL LOCATION	4
CONFIDENTIAL LOCATION CONFIDENTIAL LOCATION	CA 92841
EPCRA 6	GRID# 7
II. CHEMICAL INFORMATION	
Dodecy Benzene Sulfonic Acid WASTE 1 Yes 8	TRADE SECRET Yes No 11
COMMON NAME OOOCO	* If EPCRA see instructions  An EHS Chemical Yes No 12
CAS # 10 FIRE CODE HAZARD CLASSES (supplied by GGFD)	*If EHS is *Yes*, all amounts must be LBS
07176-87-0	. 13
TANK A TANK A TANK	No 15 CURIES 16
PHYSICAL STATE a. SOLID b. LIQUID c. GAS 17 FED HAZARD CATEGORIES a. FIRE b.	REACTIVE . c. PRESSURE RELEASE 18
AVERAGE DAILY  19 MAXIMUM DAILY  20 ANNUAL MASTE ANOUNT  AVERAGE DAILY	e. CHRONIC HEALTH
AMOUNT 40 AMOUNT 55	21 STATE WASTE CODE $\mathcal{N}$
C. POUNDS Cd. TONS	GEST CONTAINER 25
*If EHS, amount must be in pounds.  STORAGE CONTAINER   a. ABOVEGROUND TANK   e. PLASTIC DRUM   i. VAT   m CYLIN	
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d STEEL DRUM h. CARBOY l. BOX(S) p. IN MA	TIC CONTAINER S. TOTE BIN ICH OR EQUIP L OTHER
STORAGE PRESSURE AMBIENT b. ABOVE AMBIENT c. BELOW AMBIE	ENT 27
STORAGE:TEMPERATURE . AMBIENT . b. ABOVE AMBIENT . c. BELOW AMBIE	NT d. CRYOGENIC 28
	EHS CAS#
	PANO 31 27-176-87-02
	MNO 31 7664-93-9 32
3 29 30 Yes	□ No 31 32
30 Yes	□ No 31 32
30 Yes	□ No 31 32
f more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional shee	ats of paper capturing the required information.
PLACARDING INFORMATION	
	704 HAZARD DIAMOND
	RED) REACTIVE
OOT HAZARD CLASS CASS COTTOSIVE 34 HEALTH (BLUE)	→3×2 ← (YELLOW)
Refer to shipping papers or MSDS  SPECI PCRA ☐ YES  NO  Refer to shipping papers or MSDS  SPECI HAZAF	THE THE PERSON NAMED IN COLUMN TO TH
PCRA ☐ YES NO 35	
X MAKE AS MAN	Y COPIES OF CHEMICAL
If EPCRA, Please Sign Here 36 INVENTOR	Y FORM AS NEEDED

# NORFOX® DDBSA

Norfox Code, 1814

Norman, Fox & Co. 5611 S. Boyle Ave. Vernon, CA 90058 USA

### SECTION 1 - PRODUCT IDENTITY

NORFOX DDBSA
Detergent acid (Low 2-pheny

Detergent acid (Low 2-phenyl C-12/13 type)

An organic sulfonic acid

INCI Name: Dodecylbenzene sulfonic acid CAS #27176-87-0 EINECS 248-289-4

# FOR HELP CONTACT

CHEMTREC: 1-800-424-9300 International: 1-703-527-3887 Company: 1-323-583-0016

Revised Date: September 30, 2002 Prepared by: Norman, Fox & Co. Date Printed: 10/22/2002 12:47 PM

# SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Contains minimum 96% dodecylbenzene sulfonic acid {CAS #27176-87-0} and 1.5% sulfuric acid, {CAS #7664-93-9} which are hazardous (CORROSIVE) MATERIALS. NORFOX DDBSA does not contain any known carcinogens at 0.1% or above or carcinogens known to be hazardous at lower concentrations. This material is regulated under Canada's WHMIS at a threshold level of 1% as an ingredient in mixtures. See Section 11 for exposure limits.

Exposure limits: (see Section 11)
DOT Category: CORROSIVE
OSHA Category: CORROSIVE

HAZARDI	RATINGS
HEALTH	3-High
FIRE	1-Slight
REACTIVITY	2-Moderate

# **SECTION 3 - HAZARDS IDENTIFICATION**

Causes severe chemical burns to skin and other tissue. May be fatal if inhaled (aspirated) or swallowed. Vapors may be extremely irritating to respiratory tract and may cause severe eye damage including blindness. Harmful to fish and other water organisms. Keep out of waterways. Toxic to plants, wildlife and domestic animals.

1 of 4 pag s

- 5611 S. Boyle Avenue - Vernan, CA + 90058-3930 USA - 323.837 7400 + Fix 373.837 7474 - Www.nortox.ws - into to norto



# SECTION 4 - FIRST AID MEASURES

### NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON

Get emergency medical attention IMMEDIATELY.

Careful evacuation of stomach by medical personnel is imperative.

Skin: Remove contaminated clothing - wash area with mild soap in potable water.

Wash contaminated clothing before reusing. Discard contaminated footwear. Flush with potable water or sterile buffer. Do not let victim rub eyes. Hold

eyelids open to assure complete flushing.

Inhalation: Remove to fresh air - artificial respiration if necessary.

SEEK PROMPT MEDICAL ATTENTION FOR EYE CONTACT OR INGESTION IF ANY SYMPTOMS PERSIST CONSULT A PHYSICIAN

## **SECTION 5 - FIRE FIGHTING MEASURES**

Flash point: >300°F

Explosive Limits: Not a safety factor due to low volatility

Use extinguishing media appropriate to primary source of fire. Keep containers cool - must be hot to burn. NORFOX DDBSA can burn in fire releasing hazardous combustion products including carbon monoxide, carbon dioxide, corrosive and toxic oxides of sulfur. Dike and collect water used to fight fire since run off will be slippery and can cause environmental damage. Self contained breathing apparatus and protective clothing should be worn while fighting fires involving chemicals.

# SECTION 6 - ACCIDENTAL RELEASE MEASURES

Isolate hazard area. Dike around large spills to prevent spreading. Keep unnecessary and unprotected personnel from entering. Protective clothing should be worn while handling spills (see section 8). Recover all usable material. Avoid run-off into sewers or ditches which lead to waterways. Soak up remainder with sand or dirt. Neutralize with a weak base such as sodium carbonate or sodium bicarbonate (Carbon dioxide gas will be released) or a dilute dispersion of lime. After removal, flush contaminated area thoroughly with water. The Reportable Quantity (RO) under SARA Title III & CERCLA is 1000 lb. for dodccylbenzene sulfonic acid. Environmental releases require reporting to an environmental agency. The toll free number for the U.S. Coast Guard National Response Center is (800) 424-8802.

## SECTION 7 - HANDLING AND STORAGE

Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Remove contaminated clothing in wash before re-use. Follow all MSDS/label precautions even after container is emptied because it may contain product residues. In the presence of water, NORFOX DDBSA reacts with most metals releasing hydrogen gas which is explosive and lighter than air (collects at ceiling). Keep in dry and well ventila e area. To preserve color, store under a nitrogen blanket. Keep container closed when not in use. Keep floor sweeping compound, cat litter, sand or similar material in handling areas for emergency use.

Norfox DDBSA - Code #1814 - September 30, 2002

2 of 4 pic &

5611-5. Boyle Avenue ... Vernon CA ... 00058 930 05A ... 223827.7000 ... 122.72382.7178 ... www.horfox.wr



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# SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits: See Section 11

Use supplied air or MESA or NIOSH gas mask with acid gas canister if TLV is exceeded. Adequate ventilation should be provided. Chemically resistant safety shoes and chemical goggles or face shield an i goggles are recommended. Provide nearby safety showers & eye washing (preferably full face) facilities. Protective rubber or neoprene gloves with substantial cuff are required for contact with product or solutions. Long sleeve shirt with buttoned collar and long pants extending over work shoes are recommended. Use supplied air for combustion products.

# SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.04 @ 21°C

Percent volatile matter: <1%

Appearance: Viscous amber liquid

Odor: Characteristic of sulfur dioxide/trioxide

Boiling Point: >400°F

Solubility in water: Essentially complete - may form gel

pH of 10% Solution: <1 (Highly acidic)

Evaporation Rate: Negligible

### SECTION 10 - STABILITY AND REACTIVITY

NORFOX DDBSA is stable but may decompose if heated. Hazardous polymerization will not occur. NORFOX DDBSA is a strong acid and an oxidizing material. It is incompatible with strong, concentrated oxidizing agents and chlorine bleach and reacts violently with concentrated alkalis.

### SECTION 11 - TOXICOLOGY INFORMATION

Threshold limit value: ACGIH Threshold Limit Value (TLV) is 1 mg/m³ TWA basis sulfuric acid component for a time weighted average (TWA) over an 8-Hour workday, 4)hour workweek. This is the average exposure to which nearly all workers

may be repeatedly exposed without adverse effect.

Additionally, there is an ACGIH Short Term Exposure Limit (STEL) of 3 mg/M<sup>3</sup> for a time weighted average (TWA) over any 15 minute period. This is the average exposure to which workers can be exposed for a short period c

time without suffering adverse effects.

Destructive on contact - Causes severe irritation and may cause blindness. Eye Contact:

Mist or vapor will irritate nasal passages and may cause ulceration. Inhalation:

Corrosive to contacted tissues causing severe pain and chemical burns. Skin Contact:

Ingestion: Severe burns and tissue perforation, irritation, nausea, vomiting.

Chronic: Repeated exposure can cause cumulative ulceration and pulmonary edema.

Norfox DDBSA - Code #1814 - September 30, 2002

3 of 4 page:



When neutralized, NORFOX DDBSA is biodegradable under most definitions of the term. In the unneutralized acid form this material is toxic to most aquatic and terrestrial plants and other life forms.

### SECTION 13 - DISPOSAL CONSIDERATIONS

Neutralized NORFOX DDBSA is found in many household cleaning products. Release of neutralized material to sanitary sewer in small amounts is inherent with most end uses. Unneutralized material should be treated as a strong, corrosive acid. No disposal method should be used which would pose an environmental or human health threat including any which would contaminate ground or surface waters.

## SECTION 14 - TRANSPORT INFORMATION

Proper shipping name: ALKYL SULFONIC ACIDS, LIQUID, 8, UN2586, PGII, NAERGB 153 Hazard Class: 8 - CORROSIVE MATERIAL

Vessel Stowage: May be stowed on deck or under deck on cargo vessels or on passenger vessels carryin? no more than 25 passengers or one passenger per each 3 meters of overall length or on deck only of passenger vessels carrying larger numbers of passengers.

Aircraft Quantity Limitations: Passenger aircraft - 1 liter Cargo aircraft - 30 liters.

### **SECTION 15 - REGULATORY INFORMATION**

OSHA Category: CORROSIVE

TSCA: This material is listed in the USEPA's TSCA inventory.

CERCLA: The Reportable Quantity (RQ) under CERCLA is 1,000#

SARA: This product is subject to Section 313 Annual Toxic Release Reporting under Title III

# SECTION 16 - OTHER INFORMATION

To reorder, call Norman Fox & Co. at 323-837-7400

Norfox DDB5A - Code #1814 - September 30, 2002

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# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

ADD DELETE REVISED 1	Page 6 19 2
	iendly Products Nenus Labs T. Nc.
I. FACILITY INFORMA	ATION
1260 Monarch St. Garden	n Grove CA 92841
CONFIDENTIAL LOCATION Yes No 5 MAP#	6 GRID# 7
II. CHEMICAL INFORMA	MATION
Ethyl Alcohol 200 Proof Ethyl Alcohol WAS	ASTE Yes 8 TRADE SECRET Yes No 11
COMMON NAME	9 An EHS Chemical Yes 🕅 No 12
CAS# 10 FIRE CODE HAZARD CLASSES (supplied by GGFD)	*If EHS is "Yes", all amounts must be LBS
64-17-5	
L. a. PURE D. MIXTURE C. WASTE	OACTIVE Yes No 15 CURIES 16
PHYSICAL STATE (Check one Nem only)    a. SOLID   b. LIQUID   c. GAS   17   FED HAZARD CATEGORIES   17   FED HAZARD CATEGORIES   17   FED HAZARD CATEGORIES   17   FED HAZARD CATEGORIES   18   19   19   19   19   19   19   19	a. FIRE b. REACTIVE c. PRESSURE RELEASE 18
AVERAGE DAILY 200 19 MAXIMUM DAILY 550 20 ANNUAL WAS	ASTE AMOUNT NA 21 STATE WASTE CODE NA 22
UNITS A. GALLONS b. CUBIC FEET 23 DAYS ON SITE c. POUNDS d. TONS If EHS, amount must be in pounds.	24 LARGEST CONTAINER 25
STORAGE CONTAINER  STORAGE CONTAINER  B. ABOVEGROUND TANK  Check all that apply)  B. UNDERGROUND TANK  C. TANK INSIDE BLDG  G. TANK INSIDE BLDG  G. STEEL DRUM  D. CARBOY  I. VAT  I. NONMETALLIC DRUM  II. FIBEL  II. BAG(  III. BAG(   III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(  III. BAG(   III. BAG(  III. BAG(   III. BAG(   III. BAG(   III. BAG(   III. BAG(   III. BAG(    III. BAG(    III. BAG(    III. BAG(    III. BAG(     III. BAG(      III. BAG(      III. BAG(       III. BAG(        III. BAG(	BER DRUM
STORAGE PRESSURE .	☐ c. BELOW AMBIENT 27
STORAGE TEMPERATURE  a. AMBIENT  b. ABOVE AMBIENT	a. BELOW AMBIENT d. CRYOGENIC 28
%WT HAZARDOUS COMPONENT (For mixture or waste only	nly) EHS CAS#
19532 Fthy Alcoha	30 ☐ Yes <b>№</b> No 31 69-17-5 32
2 4.7 29 [Soprapy Alcoho]	30 Yes SNo 31 67-63-0 32
3 29	30 Yes No 31 32
4 . 29	30 Yes No 31 32
5 29	30 Yes No 31 32
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carci	rcinogenic, attach additional sheets of paper capturing the required information.
PLACARDING INFORMA	IATION
UNDOT# Refer to shipping papers or MSDS	NFPA 704 HAZARD DIAMOND FIRE (RED)
DOT HAZARD CLASS CLASS 3 Fallbale 34 Refer to shipping papers or MSDS	HEALTH (YELLOW) (BLUE)  SPECIAL WHITE 37
EPCRA YES □ NO 35	HAZARD W OX7W.
x Dimi DA	MAKE AS MANY COPIES OF CHEMICAL
If EPCRA, Please Sign Here 36	INVENTORY FORM AS NEEDED

Univar USA

005 05/26/05 SDA3C/200PF

PRODUCT NAME:

SDA3C/200PF

MSDS NUMBER:

P21568VS

DATE ISSUED:

01/11/2005

SUPERSEDES:

7/14/2000

ISSUED BY:

004436

\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*

SECTION 1: IDENTIFICATION

Product Name: SDA3C/200PF/IPA/140500 Product Number: 00000000000503092 Chemical Family: Ethyl Alcohol

CAS Number: 64-17-5

Chemical Name: Ethyl Alcohol

Synonyms: 200 Proof Ethyl Alcohol, Anhydrous, Denatured Ethanol

Manufacturer:

Equistar Chemicals, LP

One Houston Center, Suite 700 P.O. Box 2583 1221 McKinney St.

Houston Texas 77252-2583

Customer Service: 888 777-0232 Product Safety: 800 700-0946

24 Hour Emergency Contact: CHEMTREC 800 424-9300

EQUISTAR 800-245-4532

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Wt.

Inventory Concentration \*\* Risk Symbol CAS # Component Name

95.3 R11 200-578-6 64-17-5 Ethyl alcohol R11, F, Xi 4.7 200-661-7 67-63-0 Isopropyl Alcohol R36, R67

Concentration of gaseous products or materials is given in Mole Compositions given are typical values not specifications.

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview

This material is HAZARDOUS by OSHA Hazard Communication definition.

Signal Word WARNING!

Hazards

Flammable Liquid. Material can burn with little or no visible flame. May be irritating to the eyes, skin, and respiratory system. May cause central nervous system depression.

NFPA

Health: 0

Flammability: 3 Reactivity: 0

HMIS

Health: 1

OHITANT OOM

Flammability: 3
Reactivity 0

Physical State: Liquid

Color: Colorless liquid/invisible vapor.

Odor: Sweet. Alcohol-like.

Odor Threshold; No Data Available.

Potential Health Effects

Routes of Exposure Inhalation Skin. Eye

Signs and Symptoms of Acute Exposure
May cause eye and upper respiratory tract irritation. Short-term
overexposure above 1,000 ppm by the inhalation route may cause central
nervous system (CNS) effects such as headache and irritation of eyes, nose
and throat. If continued for more than an hour additional CNS effects may
occur such as: dizziness, drowsiness, loss of appetite, and an inability to
concentrate. Gastrointestinal (stomach) effects may occur with symptoms
such as nausea and vomiting.

Ethyl alcohol 64-17-5

May cause eye and upper respiratory tract irritation. Short-term overexposure above 1,000 ppm by the inhalation route may cause central nervous system (CNS) effects such as headache and irritation of eyes, nose and throat. If continued for more than an hour additional CNS effects may occur such as: dizziness, drowsiness, loss of appetite, and an inability to concentrate. Gastrointestinal (stomach) effects may occur with symptoms such as nausea and vomiting.

Isopropyl Alcohol 67-63-0Severe eye irritant. Exposure could cause central nervous system depression and liver and kidney damage.

Skin

May cause dermatitis by defatting the skin from prolonged or repeated contact.

Inhalation

Upper respiratory tract irritation, drowsiness and dizziness may occur.

Eye

May be irritating to the eyes.

Ingestion

Effects of ethyl alcohol ingestion depend on the amount and rate of consumption. Short term overexposure can cause drunkenness, depression of the central nervous system, nausea, vomiting, diarrhea, liver damage, and death.

Chronic Health Effects

Long-term exposure can also cause loss of appetite, weight loss, nervousness, memory loss, mental retardation and liver damage. May cause dermatitis by defatting the skin from prolonged or repeated contact. Alcoholic beverages are carcinogenic to humans. Ethanol is a developmental toxin and various effects have been associated with ethanol intake. Examples of chronic ethanol abuse effects include physical dependence, malnutrition, amnesia, dementia, somnolence, cardiac myopathy, hepatotoxicity, GI bleeding and pancreatitis. Combined exposure to ethanol and certain other chemicals may result in increased toxic effects.

Ethyl alcohol 64-17-5 Long-term exposure can also cause loss of appetite, weight loss, nervousness, memory loss, mental retardation and liver damage. May cause dermatitis by defatting the skin from prolonged or repeated contact. Alcoholic beverages are carcinogenic to humans. Ethanol is a developmental toxin and various effects have been associated with ethanol intake. Examples of chronic ethanol abuse effects include physical dependence, malnutrition, amnesia, dementia, somnolence, cardiac myopathy, hepatotoxicity, GI bleeding and pancreatitis. Combined exposure to ethanol and certain other chemicals may result in increased toxic effects.

Isopropyl Alcohol 67-63-0

Repeated or prolonged exposure to isopropanol can be irritating to mucosal membranes. Repeated or prolonged exposure may cause respiratory irritation. Repeated or prolonged contact may cause skin irritation. Repeated exposure may cause liver and kidney damage.

Conditions Aggravated by Exposure Any pre-existing disorders or diseases of the nervous system, liver, respiratory system, skin, eyes, gastrointestinal tract

SECTION 4: FIRST AID MEASURES

#### General

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 3 of this MSDS.

#### Skin

Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. If irritation persists, get medical attention.

### Inhalation

If symptoms are experienced, move victim to fresh air. Obtain medical attention if breathing difficulty persists.

### Eye

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

### Ingestion

If swallowed, give lukewarm water or milk (pint/ 1/2 litre) if victim completely conscious/alert. Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk. Obtain emergency room treatment immediately.

Note to Physician

Provide oxygen and/or ventilation assistance, if needed. Do not induce vomiting. However, if vomiting occurs spontaneously, maintain open airway. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

# SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties

Classification

OSHA/NFPA Class IB Flammable Liquid.

Flash Point: 13 - 16 deg C (55.4 - 60.8 deg F) ASTM D-56 (Tag Closed Cup) Auto-Ignition Temperature 363 deg C (685.4 deg F)

Lower Flammable Limit 3.3 vol% Upper Flammable Limit 19 vol%

Extinguishing Media

Suitable: SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.

Protection of Firefighters
Protective Equipment/Clothing: Wear positive pressure self-contained
breathing apparatus (SCBA). Structural firefighters protective clothing

will only provide limited protection.

Fire Fighting Guidance: Ethanol vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Alcohols burn with a pale blue flame which may be extremely hard to see under normal lighting conditions. Personnel may only be able to feel the heat of the fire without seeing flames. Extreme caution must be exercised in fighting alcohol fires. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.

Hazardous Combustion Products: Carbon monoxide is expected to be the primary hazardous combustion product.

# SECTION 6: ACCIDENTAL RELEASE MEASURES

Release Response

Highly flammable liquid. Eliminate all sources of ignition. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material.

# SECTION 7: HANDLING AND STORAGE

Handling

Open and handle container with care. Metal containers involved in the transfer of this material should be grounded and bonded.

### Storage

Protect container against physical damage. Detached or outside storage is preferred. Inside storage should be in an NFPA approved flammable liquids storage room or cabinet. All ignition sources should be eliminated. Electrical installations should be in accordance with Article 501 of the National Electrical Code. NFPA 30, Flammable and Combustible Liquids Code, should be followed for all storage and handling. Consult local fire codes for additional storage information.

# SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Personal Protection

Inhalation A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use.

Skin: Wear chemical resistant gloves such as rubber, neoprene or vinyl. When

skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn.

Eve: Use splash goggles when eye contact due to splashing or spraying liquid is possible.

Additional Remarks

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present,

duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

### Occupational Exposure Limits

Component Name	Source / Date	Value	Type	Notation
Ethyl alcohol	US (ACGIH)	1,000 ppm	8 HRS/TWA	No
	US (OSHA)	1,000 ppm	8 HRS/TWA	No
Isopropyl Alcohol	US (ACGIH)	400 ppm	8 HRS/TWA	No
	US (ACGIH)	500 ppm	15 MIN/STEL	No
	US (OSHA)	400 ppm	8 HRS/TWA	No

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid. Colorless liquid/invisible vapor.

Odor: Sweet. Alcohol-like.

Odor Threshold: No Data Available.

pH: Not applicable.

Boiling Point/Boiling Range: 78.4 deg C (173.12 deg F) Freezing Point/Melting Point: -144 deg C (-227.2 deg F)

Flash Point: 13 - 16 deg C (55.4 - 60.8 deg F) ASTM D-56 (Tag Closed Cup)

Auto-ignition: 363 deg C (685.4 deg F)

Flammability: OSHA/NFPA Class IB Flammable Liquid.

Lower Flammable Limit: 3.3 vol% Upper Flammable Limit: 19 vol%

Explosive Properties: No Data Available. Oxidizing Properties: No Data Available.

Vapor Pressure: 44.6 mm Hg (c) 20 deg C (68 deg F)

Evaporation Rate: Specific data not available - expected to be rapid.

Relative Density: 0.789 (c) 20 deg C (68 deg F)

Relative Vapor Density: 1.59 (Air = 1.0)

Viscosity: No Data Available. Solubility (Water): Complete

Partition Coefficient (Kow): No Data Available.

Additional Physical and Chemical Properties: No additional information available.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability The product is stable.

Conditions to Avoid

Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

Substances to Avoid

Contact with acetyl chloride or other oxidizing agents may result in a violent reaction.

Decomposition Products

Not expected to decompose under normal conditions.

Hazardous Polymerization Not expected to occur.

Reactions with Air and Water

Does not react with air, water or other common materials.

SECTION 11: TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION

Product Summary

Ethanol is not toxic by OSHA criteria. Coingestion of sedative hypnotics or tranquilizers can increase the toxic affects of ethanol. No additional toxicology information is available for this material. (See Component Toxicity Information).

Acute Toxicity - Lethal Doses

LC50 (Inhl) Rat 20000 PPM 10 HOURS

LD50 (Oral) Rat 7060 MG/KG BWT LDLo (Oral) Human 1400 MG/KG BWT

#### Irritation

Skin Defatting of the skin with irritation, dryness and cracking. Standard Draize skin test (rabbit) - Dose: 20 mg/24 hrs Reaction: Moderate Eye: Eye exposure to Ethanol generally causes transient pain, irritation, and reflex lid closure. A foreign-body sensation may persist for one to two days. Vapors produce transient stinging and tearing, but no apparent adverse effects. Transiently impaired preception of color may occur with acute ingestion or chronic alcoholism. Standard Draize eye test (rabbit) - Dose: 500 mg Reaction: Severe Dose: 500 mg/24 hrs Reaction: Mild

Repeated Dose Toxicity

Exposure to over 1000 ppm may cause headache, drowsiness and lassitude, loss of appetite, inability to concentrate and irritation of the throat.

# Reproductive Effects

Excessive consumption of alcoholic beverages during pregnancy can cause fetal alcohol syndrome. The development of physical and mental manifestation in the offspring; it may also cause defects in the central nervous system, heart, kidney and limbs. Moderate consumption can be associated with reduced birthweight and behavioral defects, but effects generally have not been observed with an intake of about one drink per day.

## Carcinogenicity

The International Agency for Research on Cancer (IARC) has determined alcoholic beverages are carcinogenic to humans (Group 1) and the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus and liver is causally related to the consumption of alcoholic beverages in humans. The American Conference of Governmental Industrial Hygienists (ACGIH) list ethyl alcohol as an A4 - Not classifiable as a Human Carcinogen. These are agents, which cause concern that they are carcinogenic for humans, but which cannot be assessed conclusively because of a lack of data. Animal studies do not provide indications carcinogenicity which are sufficient to classify the agent into one of their other categories.

### COMPONENT INFORMATION

Ethyl alcohol 64-17-5

Acute Toxicity - Lethal Doses

LC50 (Inhl) Rat 20000 PPM 10 HOURS

LD50 (Oral) Rat 7060 MG/KG BWT LDLo (Oral) Human 1400 MG/KG BWT

### Irritation

Skin Defatting of the skin with irritation, dryness and cracking. Standard Draize skin test (rabbit) - Dose: 20 mg/24 hrs Reaction: Moderate

Eye: Eye exposure to Ethanol generally causes transient pain, irritation, and reflex lid closure. A foreign-body sensation may persist for one to two days. Vapors produce transient stinging and tearing, but no apparent adverse effects. Transiently impaired preception of color may occur with acute ingestion or chronic alcoholism. Standard Draize eye test (rabbit) - Dose: 500 mg Reaction: Severe Dose: 500 mg/24 hrs Reaction: Mild

Repeated Dose Toxicity

Exposure to over 1000 ppm may cause headache, drowsiness and lassitude, loss of appetite, inability to concentrate and irritation of the throat.

Reproductive Effects
Excessive consumption of alcoholic beverages during pregnancy can cause fetal alcohol syndrome. The development of physical and mental manifestation in the offspring; it may also cause defects in the central nervous system, heart, kidney and limbs. Moderate consumption can be associated with reduced birthweight and behavioral defects, but effects generally have not been observed with an intake of about one drink per day.

Carcinogenicity
The International Agency for Research on Cancer (IARC) has determined alcoholic beverages are carcinogenic to humans (Group 1) and the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus and liver is causally related to the consumption of alcoholic beverages in humans. The American Conference of Governmental Industrial Hygienists (ACGIH) list ethyl alcohol as an A4 - Not classifiable as a Human Carcinogen. These are agents, which cause concern that they are carcinogenic for humans, but which cannot be assessed conclusively because of a lack of data. Animal studies do not provide indications carcinogenicity which are sufficient to classify the agent into one of their other categories.

Isopropyl Alcohol 67-63-0

Acute Toxicity - Lethal Doses

LC50 (Inhl) Rat 19,000 PPM 8 HOURS

LD50 (Oral) Rat 4700 MG/KG

LD50 (Skin) Rabbit. 12,870 MG/KG

Target Organ Effects
Eye. Skin. Respiratory system. Mucous membrane irritant.

Reproductive Effects
Slight effects on reproductive function have been noted in male animals
after administration of large oral doses. Levels of exposure that
demonstrated no effects in laboratory animals are very high when compared
to human exposure under normal use in the workplace. The significance of
these findings are unknown in respect to humans.

SECTION 12: ECOLOGICAL INFORMATION

### PRODUCT INFORMATION

Ecotoxicity
This material is not classified as harmful or toxic to fish. This material is not classified as harmful or toxic to algae or higher aquatic plants.

Acute toxicity to fish
LC50 / 96 HOUR rainbow trout. > 10,000 mg/I
Summary: Static and/or flow-through LC50(96-hr)= 13,000-15,300 mg/I

LC50 / 96 HOUR fathead minnow 15,300 mg/I

Toxicity to aquatic plants
Toxicity Threshold / green algae. 1,450 mg/I Summary: growth inhibition

Toxicity to microorganisms
Toxicity Threshold / bacteria. 6,500 mg/I Summary: Inhibition of cell
multiplication begins.

Environmental Fate and Pathway When spilled on the land ethyl alcohol is apt to volatilize, biodegrade, and/or leach into the ground water. It is anticipated based on physical

properties of ethyl alcohol including water solubility, vapor pressure, and octanol/water coefficient (log P=-0.31) that water will serve as the final media. Based on these factors it is anticipated that this substance will neither adsorb to soil nor bioconcentrate in aquatic organisms. Once in water photolysis, oxidation, hydrolysis, and biodegradation is anticipated to occur.

Persistance and Degradability Biodegradation: This material is expected to be biodegradable. Bioaccumulation: This material is not expected to bioaccumulate.

### COMPONENT INFORMATION

Ethyl alcohol 64-17-5 Ecotoxicity This material is not classified as harmful or toxic to fish. This material is not classified as harmful or toxic to algae or higher aquatic plants.

Acute toxicity to fish LC50 / 96 HOUR rainbow trout. > 10,000 mg/I Summary: Static and/or flow-through LC50(96-hr)= 13,000-15,300 mgA

LC50 / 96 HOUR fathead minnow 15,300 mg/L

Toxicity to aquatic plants
Toxicity Threshold / green algae. 1,450 mg/I Summary: growth inhibition

Toxicity to microorganisms
Toxicity Threshold/ bacteria. 6,500 mg/I Summary: Inhibition of cell
multiplication begins.

Environmental Fate and Pathway When spilled on the land ethyl alcohol is apt to volatilize, biodegrade, and/or leach into the ground water. It is anticipated based on physical properties of ethyl alcohol including water solubility, vapor pressure, and octanol/water coefficient (log P=-0.31) that water will serve as the final media. Based on these factors it is anticipated that this substance will neither adsorb to soil nor bioconcentrate in aquatic organisms. Once in water photolysis, oxidation, hydrolysis, and biodegradation is anticipated to occur.

Persistance and Degradability Biodegradation: This material is expected to be biodegradable. Bioaccumulation: This material is not expected to bioaccumulate.

Isopropyl Alcohol 67-63-0

Ecotoxicity
This material may be harmful to aquatic species.

Acute toxicity to fish LC50 / 24 HOURS goldfish > 5,000 mg/I

LC50 / 96 HOURS fathead minnow 9.6 mgA

Acute toxicity to aquatic invertebrates LC50 / 48 HOURS Marine shrimp. 1,400 mg/L

Environmental Fate and Pathway When released into the environment, this material will volatilize rapidly. It is not expected to adsorb onto soils or sediments. This material will biodegrade relatively rapidly in both soil and water, and will not persist in the environment. Due care should be taken to avoid accidental releases to aquatic or terrestrial systems.

Persistance and Degradability Bioaccumulation: BCF = 3.0 This material is not expected to bioaccumulate.

### SECTION 13: DISPOSAL CONSIDERATIONS

Contaminated products/soil/water may be Resource Conservation and Recovery Act (RCRA) hazardous waste/Occupational Safety and Health Administration (OSHA) hazardous material due to low flash point (see 40 Code of Federal Regulations (CFR) 261 and 29 CFR 1910). Comply with federal, state, or local regulations for disposal.

### SECTION 14: TRANSPORT INFORMATION

### Special Requirements

If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in the composition section of this sheet, based on final composition of your product.

Proper Shipping Name Ethanol solutions ID No. UN1170

Hazard Class 3

PG II

### SECTION 15: REGULATORY INFORMATION

# Regulatory Status

Country Inventory Australia AICS X Canada DSL X Canada NDSL China IECS X European Union EINECS European Union ELINCS European Union NLP Korea ECL Philippines PICCS X United States TSCA

C = Contact Lyondell/Equistar by e-mail at product.safety@lyondell.com or product.safety@equistar.com for additional information.

All components of this product are listed or are exempt from listing on the TSCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

### SARA 302/304

No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

### SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312: Immediate (Acute) Health Hazard. Delayed (Chronic) Health Hazard. Fire Hazard.

### SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

Component Reporting Threshold

## State Reporting

This product contains the following ingredients for which the state of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute:

Ethyl alcohol; developmental toxicity (when in alcoholic beverages) Labeling Information

### Other

Use of ethyl alcohol without prior payment of applicable excise tax is strictly controlled by regulations promulgated and enforced by the U.S. Bureau of Alcohol, Tobacco and Firearms (ATF), U.S. Dept. of the Treasury. Governing regulations have been defined in Title 27, U.S. Code of Federal Regulations.

SECTION 16: OTHER INFORMATION
CONTACT: MSDS COORDINATOR UNIVAR USA INC.  DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400
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ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED HEREIN,
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DO NOT USE INGREDIENT INFORMATION AND/OR INGREDIENT PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SHEET CLERCY CONDITIONS OF USE ARE REVOND UNIVARY CONTROL AND THEREFORE HIGERS



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

X MAKE AS MANY COPIES OF CHEMICAL		ADD DELETE REVISED 1		Page	7 of 19 2				
COMPRIENTIAL LOCATION   Vea   No 5   MAP #   S   GRID #   7	FACILITY ID# 3	0 0 3 5	rth briendly	1 Products/	lenus Labs INC.				
CHEMICAL INFORMATION	CHEMICAL LOCATION		TY INFORMATION		4				
II. CHEMICAL INFORMATION   CHEMICAL PARKE   Yes   TRADE SECRET   Yes   No   11	1260	Monarch St. Gard	en Grove	CA 92	841				
COMMON MANE  COMMO		ATION Yes No 5 MAP#	2 -	6 GRID#	7				
STORAGE PRESSURE   SANO   SANOY   STEEL DRUM   SANOY   SANOY   STEEL DRUM   SANOY		II. CHEMIC	AL INFORMATION						
Yes   Process	Ethy!	ene Glycol Monobutyl	Ethe Waste 1	• If EPCRA see	***				
TPE (Clause see the activ)	COMMON NAME	Glycol Ether EB	)	All End Crieffical					
PHYSICAL STATE (CHACK with their rows)    A SOLID   D. LIQUID   C. GAS 17   FED NAZARD   A. FIRE   D. REACTIVE   C. PRESSURE RELEASE   18	CAS#	36 2 10 FIRE CODE HAZARD CLASSES (supplie	d by GGFD)	1 11 2110 13 1 103 , 211					
CATEGORIES   d. AGUTE HEALTH   d. CHRONIC HEALTH    AVERAGE DAILY 55   19 MAXIMUM DAILY   0 ANNUAL WASTE AMOUNT   1 STATEWASTE CODE   1/A   22  UNITS   d. GALLONS   d. TONIS   d. CHISCO ETECT   23 DAYS ON SITE   24 LARGEST CONTAINER   5.55    TEBIS amount must be in puriss.  STORAGE CONTAINER   d. ABOVEGROUND TANK   d. PLASTIC DRUM   I. VAT   m. CYLINDER   d. TANK WASGON   7. TANK WASGON   1. TONIS   M. CARBOY   I. BOX(S)   d. TONIS   M. CARBOY   d. TANK WASGON   1. TONIS   M. CARBOY   d. TANK WASGON   d. TANK	TYPE (Check one liem or	b. MIXTURE . WASTE	14 RADIOACTIVE	Yes No 15 CUF	RIES 16				
ANNUAL WASTE AMOUNT	PHYSICAL STATE (Check one Item only)	a. SOLID b. LIQUID C. GAS 17	CATEGORIES						
UNITS			DOS-THERE DISEBIES						
TERS, amount must be in pounds.  STORAGE CONTAINER   a. ABOVE ARRON   c. PLASTIC DRUM   l. VAT   m. CYLINDER   q. TANKWAGQN   26   (Check all their apply)   l. UNDERGROUND TANK   c. NOMETALLIC DRUM   l. FIBER DRUM   n. GLASS CONTAINER   n. RAIL CAR I. TOTE BIN   n. CARBOY   l. BOX(S)   p. PLASTIC CONTAINER   n. TOTE BIN   n. CARBOY   l. BOX(S)   p. IN IMACH OR EQUIP   l. OTHER   27   m. CARBOY   m. MACH OR EQUIP   l. OTHER   m. CARBOY   m. CARBOY   m. MACH OR EQUIP   l. OTHER   m. CARBOY   m. MACH OR EQUIP   m. CARBOY   m. MACH OR EQUIP   m. CARB	UNITS A. GA	LLONS D. CUBIC FEET 23 DAYS ON SITE		24 LARGEST CONTAINER	. (0) 79				
Check all that appay)			365	55	10				
STORAGE TEMPERATURE    a. AMBIENT   b. ABOVE AMBIENT   c. BELOW AMBIENT   d. CRYOGENIC   28    WWT		□ b. UNDERGROUND TANK □ f. NONMETALLIC DRI □ c. TANK INSIDE BLDG □ g. METAL CONTAINE	JM I. FIBER DRUM R II. BAG(S)	n. GLASS CONTAINER  D o PLASTIC CONTAINER	r. RAIL CAR				
### WWT HAZARDOUS COMPONENT (For mixture or waste only)  ### PAZARDOUS IN O 31  ### PAZARDOUS INFORMATION  ### PAZARDOUS	STORAGE PRESSUR	a. AMBIENT 🔲 b. ABOVI	E AMBIENT BE	ELOW AMBIENT	27				
1   29   30   Yes   No 31   32		D. ABOVE		ELOW AMBIENT d.	CRYOGENIC 28				
2 29 30   Yes   No 31 32 32 30   Yes   No 31 32 32 4 29 30   Yes   No 31 32 32 32 32 30   Yes   No 31 32 32 32 32 33   Yes   No 31 32 32 32   Yes   No 31 32 32   Yes   No 31 32 32   Yes   No 31   Yes   No 32   Yes   No 31   Yes   No 32   Yes   No 31   Yes   No 32   Yes   No 33   Yes   No 34   Yes   No 35   Yes   No 35   Yes   No 36   Yes   No 36   Yes   No 36   Yes   No 37   Yes   No 38   Yes   No 38   Yes   No 38   Yes   No 39   Yes   No 30   Yes   No 30   Yes   No 31   Yes	%WT	HAZARDOUS COMPONENT (For mixtu	ire or waste only)	EHS	CAS#				
3 29 30   Yes   No 31 32 32 4 29 30   Yes   No 31 32 32 32 32 32 33   Yes   No 31 32 32 32   Yes   No 31 32 32   Yes   No 31 32 32   Yes   No 31   Yes   No 32   Yes   No 33   Yes   No 34   Yes   No 35   Yes   No 35   Yes   No 36   Yes   No 36   Yes   No 36   Yes   No 37   Yes   No 37   Yes   No 38   Yes   No 39   Yes   No 30   Yes   No 30   Yes   No 31   Yes   No 30   Yes   No 31   Y	1 . 29		30 [	☐ Yes ☐ No 31	32				
30   Yes   No 31   32   32   33   Yes   No 31   32   32   33   Yes   No 31   32   34   35   35   36   36   36   36   36   36	2 29		30 [	Yes □ No 31	32				
5 29 30	3 29		30 [	☐ Yes ☐ No 31	32				
## 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 # NA 1993 PC 11 33  Refer to shipping papers or MSDS  DOT HAZARD CLASS CONDUSTINE 34  Refer to shipping papers or MSDS  Refer to shipping papers or MSDS  EPCRA YES YOO 35  MAKE AS MANY COPIES OF CHEMICAL	4 29		30	☐ Yes ☐ No 31	32				
UNDOT # NA 1993 PC TT 33  Refer to shipping papers or MSDS  DOT HAZARD CLASS Coubustible 34  Refer to shipping papers or MSDS  Refer to shipping papers or MSDS  A Refer to shipping papers or MSDS  EPCRA YES NO 35  MAKE AS MANY COPIES OF CHEMICAL									
UNDOT # NA 1993 PC_TT 33  Refer to shipping papers or MSDS  DOT HAZARD CLASS CONDUSTIDE 34  Refer to shipping papers or MSDS  Refer to shipping papers or MSDS  EPCRA YES NO 35  MAKE AS MANY COPIES OF CHEMICAL									
Refer to shipping papers or MSDS  DOT HAZARD CLASS  Refer to shipping papers or MSDS  Refer to shipping papers or MSDS  REACTIVE (YELLOW)  (BLUE)  SPECIAL HAZARD  WHITE OX/WL  37  MAKE AS MANY COPIES OF CHEMICAL	ALA LOGG O. —								
DOT HAZARD CLASS Council 10 34  Refer to shipping papers or MSDS  Refer to shipping papers or MSDS  EPCRA YES YNO  X  MAKE AS MANY COPIES OF CHEMICAL	UNDOT# /V		<sup>33</sup>		DIAMOND				
EPCRA YES YNO 35  MAKE AS MANY COPIES OF CHEMICAL	DOT HAZARD (	LASS Coubustible	_ 34	HEALTH (BLUE) SPECIAL	₩HITE				
X MAKE AS MANY COPIES OF CHEMICAL	EPCRA □ YE	s <b>V</b> no	35	HAZARD W	ox/w "				
		If EPCRA, Please Sign Here	<del>-</del> 11		· · · · · · · · · · · · · · · · · · ·				

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18 4

PRODUCT: GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO: 682667 PROD NO : 274991

A G LAYNE INC 4578 BRAZIL ST

LOS ANGELES ,CA 90039

INIVAR USA INC. 17425 NE UNION HILL RD , REDMOND (425)889-3400 , WA 98052

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC (800)424-9300

RODUCT NAME:

GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ISDS NUMBER:

DZ22366

ATE ISSUED:

07/06/2006

UPERSEDES:

07/07/2003

SSUED BY:

008360

aterial Safety Data Sheet

Product and Company Identification

roduct Name LYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

istributed by: nivar USA Inc. 7425 NE Union Hill Road edmond, WA 98052 25-889-3400

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AINFRAME UPLOAD DATE: 08/14/06 RODUCT: GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO: 582667 PROD NO : 274991

Hazards Identification

mergency Overview olor: Colorless hysical State: Liquid

dor: Mild ARNING! Combustible liquid and vapor. Causes eye irritation. Harmful if wallowed. Isolate area.

his product is a "Hazardous Chemical" as defined by the OSHA Hazard omnunication Standard, 29 CFR 1910.1200.

ye Contact: May cause severe eye irritation. May cause moderate corneal njury. Effects may include discomfort or pain, and redness. Effects may be low to heal. Vapor may cause eye irritation experienced as mild discomfort

kin Contact: Brief contact may cause slight skin irritation with local edness. Repeated exposure may cause irritation, even a burn. May cause more evere response on covered skin (under clothing, gloves).

kin Absorption: Prolonged skin contact to animals which are less sensitive o hemolysis, as are humans, did not result in the absorption of harmful

nhalation; Excessive exposure may cause irritation to upper respiratory ract (nose and throat). In humans, symptoms may include: Headache. In nimals, effects have been reported on the following organs: blood hemolysis) and secondary effects on the kidney and liver. Human red blood ells have been shown to be significantly less sensitive to hemolysis than hose of rodents and rabbits.

ngestion: Moderate toxicity if swallowed. Small amounts swallowed ncidentally as a result of normal handling operations are not likely to ause injury; however, swallowing larger amounts may cause injury. In nimals, effects have been reported on the following organs: blood hemolysis) and secondary effects on the kidney and liver. Human red blood ells have been shown to be significantly less sensitive to hemolysis than hose of rodents and rabbits. Massive ingestion of ethylene glycol monobutyl ther (attempted suicides) may produce metabolic acidosis and subsequent econdary effects such as hemolysis, central nervous system and kidney ££ects.

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ffects of Repeated Exposure: In animals, effects have been reported on the cllowing organs: blood (hemolysis) and secondary effects on the kidney and iver. Human red blood cells have been shown to be significantly less ensitive to hemolysis than those of rodents and rabbits.

ancer Information: In long-term animal studies with ethylene glycol butyl ther, small but statistically significant increases in tumors were observed n mice but not rats. The effects are not believed to be relevant to humans, f the material is handled in accordance with proper industrial handling rocedures, exposures should not pose a carcinogenic risk to man.

irth Defects/Developmental Effects: Has been toxic to the fetus in lab nimals at doses toxic to the mother.

eproductive Effects: In laboratory animal studies, effects on reproduction ave been seen only at doses that produced significant toxicity to the parent nimals.

. Composition Information

omponent thylene glycol monobutyl ether CAS # 111-76-2

Amount > 99.0 %

. First-aid measures

ye Contact: Immediately flush eyes with water; remove contact lenses, if resent, after the first S minutes, then continue flushing eyes for at least 5 minutes. Obtain medical attention without delay, preferably from an phthalmologist.

kin Contact: Wash skin with plenty of water.

nhalation: Move person to fresh air. If not breathing, give artificial espiration; if by mouth to mouth use rescuer protection (pocket mask, etc). f breathing is difficult, oxygen should be administered by qualified ersonnel. Call a physician or transport to a medical facility.

ngestion: Do not induce vomiting. Seek medical attention immediately. If erson is fully conscious give 1 cup or 8 ounces (240 mL) of water. If edical advice is delayed and if an adult has swallowed several ounces of nemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 mL) of hard liquor such some some some series of proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 mL) liquor for each 10 pounds of body weight, or 1 ounce (2 1/3 tbsp.) for a 40 pound child mL per kg body weight (e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child come for an 18 kg child).

otes to Physician: Due to structural analogy and clinical data, this

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aterial may have a mechanism of intoxication similar to ethylene glycol. On hat basis, treatment similar to ethylene glycol intoxication may be of enefit. In cases where several ounces (60 - 100 mL) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult tandard literature for details of treatment. If ethanol is used, a herapeutically effective blood concentration in the range of 100 - 150 mg/dl ay be achieved by a rapid loading dose followed by a continuous intravenous nfusion. Consult standard literature for details of treatment. 4-Methyl yrazole (Antizol) is an effective blocker of alcohol dehydrogenase and hould be used in the treatment of ethylene glycol (EG), di- or triethylene lycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol ntoxication if available. Fomepizole protocol (Brent, J. et al., New England ournal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg ntravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 ours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole ntil serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and ymptoms of poisoning include anion gap metabolic acidosis, CNS depression, enal tubular injury, and possible late stage cranial nerve involvement. espiratory symptoms, including pulmonary edema, may be delayed. Persons eceiving significant exposure should be observed 24-48 hours for signs of espiratory distress. Maintain adequate ventilation and oxygenation of the atient. In severe poisoning, respiratory support with mechanical ventilation nd positive end expiratory pressure may be required. If lavage is performed, uggest endotracheal and/or esophageal control. Danger from lung aspiration ust be weighed against toxicity when considering emptying the stomach. If urn is present, treat as any thermal burn, after decontamination. Treatment f exposure should be directed at the control of symptoms and the clinical ondition of the patient.

### . Fire Fighting Measures

xtinguishing Media: Water fog or fine spray. Dry chemical fire xtinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant cams (ATC type) are preferred. General purpose synthetic foams (including FFF) or protein foams may function, but will be less effective.

ire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary ntry. Use water spray to cool fire exposed containers and fire affected zone ntil fire is out and danger of reignition has passed. Fight fire from rotected location or safe distance. Consider the use of unmanned hose olders or monitor nozzles. Immediately withdraw all personnel from the area a case of rising sound from venting safety device or discoloration of the ontainer. Burning liquids may be extinguished by dilution with water. Do not see direct water stream. May spread fire. Move container from fire area if his is possible without hazard. Burning liquids may be moved by flushing ith water to protect personnel and minimize property damage.

pecial Protective Equipment for Firefighters: Wear positive-pressure self-

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ontained breathing apparatus (SCBA) and protective fire fighting clothing includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid ontact with this material during fire fighting operations. If contact is ikely, change to full chemical resistant fire fighting clothing with selfontained breathing apparatus. If this is not available, wear full chemical 'esistant clothing with self-contained breathing apparatus and fight fire rom a remote location. For protective equipment in post-fire or non-fire :lean-up situations, refer to the relevant sections.

nusual Fire and Explosion Hazards: Container may rupture from gas generation n a fire situation. Violent steam generation or eruption may occur upon pplication of direct water stream to hot liquids.

azardous Combustion Products: During a fire, smoke may contain the original aterial in addition to combustion products of varying composition which may e toxic and/or irritating. Combustion products may include and are not imited to: Carbon monoxide. Carbon dioxide.

# Accidental Release Measures

teps to be Taken if Material is Released or Spilled: Contain spilled aterial if possible. Small spills: Absorb with materials such as: Nonombustible material. Clay. Zorb-all. Large spills: Dike area to contain pill. Collect in suitable and properly labeled containers. See Section 13, isposal Considerations, for additional information.

ersonal Precautions: Isolate area. Keep unnecessary and unprotected ersonnel from entering the area. Ventilate area of leak or spill. No smoking n area. Keep upwind of spill. Refer to Section 7, Handling, for additional recautionary measures. Use appropriate safety equipment. For additional nformation, refer to Section 8, Exposure Controls and Personal Protection.

avironmental Precautions: Prevent from entering into soil, ditches, sewers, aterways and/or groundwater. See Section 12, Ecological Information.

Handling and Storage

### andling

eneral Handling: Avoid breathing vapor. Do not get in eyes, on skin, on lothing, Do not swallow, Keep container closed. Use with adequate intilation. Wash thoroughly after handling. Keep away from heat, sparks and lame. See Section 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION.

ther Precautions: Containers, even those that have been emptied, can contain ipors. Do not cut, drill, grind, weld, or perform similar operations on or ear empty containers. Spills of these organic materials on hot fibrous isulations may lead to lowering of the autoignition temperatures possibly

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resulting in spontaneous combustion.

itorage

itore in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum, Copper, Galvanized iron. ;alvanized steel. See Section 10 for more specific information.

3. Exposure Controls / Personal Protection

xposure Limits

omponent thylene glycol monobutyl

ther

Type List Value ACGIH TWA 20 ppm

OSHA Table PEL 240 mg/m3 50 ppm SKIN

Z-1

skin notation following the exposure guideline refers to the potential or dermal absorption of the material including mucous membranes and the eyes ither by contact with vapors or by direct skin contact. t is intended to alert the reader that inhalation may not be the only route f exposure and that measures to minimize dermal exposures should be onsidered,

### ersonal Protection

ye/Face Protection: Use chemical goggles. If exposure causes eye discomfort, se a full-face respirator.

kin Protection: Use protective clothing chemically resistant to this aterial. Selection of specific items such as face shield, boots, apron, or all body suit will depend on the task. Remove contaminated clothing amediately, wash skin area with soap and water, and launder clothing before suse or dispose of properly.

and protection: Use gloves chemically resistant to this material. Examples f preferred glove barrier materials include: Butyl rubber. Ethyl vinyl lcohol laminate ("EVAL"). Examples of acceptable glove barrier materials aclude: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber 'nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: me selection of a specific glove for a particular application and duration use in a workplace should also take into account all relevant workplace ictors such as, but not limited to: Other chemicals which may be handled, tysical requirements (cut/puncture protection, dexterity, thermal ·otection), potential body reactions to glove materials, as well as the structions/specifications provided by the glove supplier.

espiratory Protection: Atmospheric levels should be maintained below the posure guideline. When respiratory protection is required for certain

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operations, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge. Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Ingineering Controls

/entilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

#### Physical and Chemical Properties 3.

hysical State color )dor 'lash Point ~ Closed Cup rlash Point - Open Cup 'lammable Limits In Air

utoignition Temperature 'apor Pressure oiling Point (760 mmHg) apor Density (air = 1) pecific Gravity (H20 = 1) iquid Density

reezing Point elting Point clubility in Water (by eight) olecular Weight ctanol/Water Partition oefficient vaporation Rate (Butyl cetate = 1) inematic Viscosity

Liquid Colorless Mild

65 deg C (149 deg F) Literature 185 deg F (185 deg F) Lower: 1.3 %(V) Literature Upper: 10.6 %(V) Literature

224 deg C (435 deg F) Literature

@ 20 deg C ASTM E1719

171 deg C (340 deg F) Literature .

No test data available

0.9005 - 0.9040 20 deg C/20 deg C Hydrometer 7.5347 lb/gal @ 15.56 deg C7.504 lb/gal @ 20 deg C8.1259 lb/gal @ -70 deg C@ freezing pt.

-77 deg C (-107 deg F) Literature

not applicable to liquids 100 % @ 25 deg C Literature

No test data available

118.2 g/mol 0.83 Measured

0.06

No test data available

## Stability and Reactivity

:ability/Instability sermally stable at typical use temperatures.

enditions to Avoid: Do not distill to dryness. Product can exidize at .evated temperatures. Generation of gas during decomposition can cause essure in closed systems.

(compatible Materials: Avoid contact with: Strong acids. Strong oxidizers.

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Hazardous Polymerization Will not occur.

Thermal Decomposition Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

11. Toxicological Information

Acute Toxicity Ingestion LD50, Rat 470 - 3,000 mg/kg

Skin Absorption .D50, Rat, 29790 mg/kg LD50, Rabbit 99 2 610 mg/kg .D50, Guinea pig > 2,000 mg/kg

Inhalation .C50, 7 h, Vapor, Rat 700 ppm

}ensitization ikin

)id not cause allergic skin reactions when tested in humans. Did not cause ellergic skin reactions when tested in guinea pigs.

epeated Dose Toxicity

n animals, effects have been reported on the following organs: blood hemolysis) and secondary effects on the kidney and liver. Human red blood ells have been shown to be significantly less sensitive to hemolysis than hose of rodents and rabbits.

hronic Toxicity and Carcinogenicity n long-term animal studies with ethylene glycol butyl ether, small but tatistically significant increases in tumors were observed in mice but not ats. The effects are not believed to be relevant to humans. If the material s handled in accordance with proper industrial handling procedures, xposures should not pose a carcinogenic risk to man.

evelopmental Toxicity

as been toxic to the fetus in lab animals at doses toxic to the mother. Did ot cause birth defects in laboratory animals.

aproductive Toxicity

n laboratory animal studies, effects on reproduction have been seen only at oses that produced significant toxicity to the parent animals.

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Senetic Toxicology

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

lovement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is high (Koc between 50 and 150).

lenry's Law Constant (H): 1.60E-5 atm\*m3/mole Measured

Partition coefficient. n-octanol/water (log Pow): 0.83 Measured

'artition coefficient, soil organic carbon/water (Koc): 67 Estimated

'ersistence and Degradability

laterial is readily biodegradable. Passes OECD test(s) for ready

iodegradability. Material is ultimately biodegradable (reaches > 70%

ineralization in OECD test(s) for inherent biodegradability). OECD

liodegradation Tests:

iodegradation

Exposure Time 28 d

Method

95 % 100 %

28 d

OECD 301E Test OECD 3028 Test

BOD 28

iological oxygen demand (BOD):

. 2%

OD 5 BOD 10 57%

BOD 20 72.2%

hemical Oxygen Demand: 2.21 mg/g

heoretical Oxygen Demand: 2.30 mg/mg

#### COTOXICITY

aterial is moderately toxic to aquatic organisms on an acute basis LC50/EC50 between 1 and 10 mg/L in most sensitive species tested).

ish Acute & Prolonged Toxicity

CSO, rainbow trout (Oncorhynchus mykiss), 96 h: 1,700 mg/L

ruatic Invertebrate Acute Toxicity

- ISO, water flea Daphnia magna: 835 mg/L
- 350, water flea Daphnia magna, immobilization: 1,600 2,500 mg/L
- 150, grass shrimp (Palaemonetes pugio), static, 96 h: 5.4 mg/L
- 50, common shrimp Crangon crangon, static, 96 h: 550 950 mg/L

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PRODUCT: GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO: 682667 PROD NO: 274991

Aquatic Plant Toxicity
EC50, green alga Selenastrum capricornutum, biomass growth inhibition, 72 h;
911 mg/L
Toxicity to Micro-organisms
LC50; bacteria: > 1,000 mg/L

## 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. VENDOR HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted; Incinerator or other thermal lestruction device.

#### 14. Transport Information

OT Non-Bulk

OT Bulk
'roper Shipping Name: COMBUSTIBLE LIQUID, NOS
'echnical Name: CONTAINS ETHYLENE GLYCOL MONOBUTYL ETHER
'azard Class: COMBUSTIBLE LIQUID ID Number: NA1993 Packing Group: PG III

'CAO/IATA OT REGULATED

his information is not intended to convey all specific regulatory or perational requirements/information relating to this product. Additional ransportation system information can be obtained through an authorized sales r customer service representative. It is the responsibility of the ransporting organization to follow all applicable laws, regulations and ules relating to the transportation of the material.

## 5. Regulatory Information

SHA Hazard Communication Standard his product is a "Hazardous Chemical" as defined by the OSHA Hazard ommunication Standard, 29 CFR 1910.1200. sperfund Amendments and Reauthorization Act of 1986 Title III (Emergency lanning and Community Right-to-Know Act of 1986) Sections 311 and 312

EPORT NUMBER: 703 ISDS NO: DZ22366

UNIVAR USA INC.

MATERIAL SAFETY DATA SHEET

VERSION: 013

PAGE: 011

IAINFRAME UPLOAD DATE: 08/14/06

RODUCT: GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO: 582567 PROD NO : 274991

mmediate (Acute) Health Hazard Yes elayed (Chronic) Health Hazard Yes ire Hazard Yes eactive Hazard Nα udden Release of Pressure Hazard

uperfund Amendments and Reauthorization Act of 1986 Title III (Emergency lanning and Community Right-to-Know Act of 1986) Section 313 his product contains the following substances which are subject to the eporting requirements of Section 313 of Title III of the Superfund mendments and Reauthorization Act of 1985 and which are listed in 40 CFR 72.

omponent thylene glycol monobutyl ether

CAS # 111-76-2

Amount > 99.0 %

ennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous ubstances List and/or Pennsylvania Environmental Hazardous Substance List: he following product components are cited in the Pennsylvania Kazardous ubstance List and/or the Pennsylvania Environmental Substance List, and are resent at levels which require reporting.

omponent thylene glycol monobutyl ether

CAS # 111-76-2

Amount > 99.0 %

ennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special azardous Substances List:

o the best of our knowledge, this product does not contain chemicals at evels which require reporting under this statute.

alifornia Proposition 55 (Safe Drinking Water and Toxic Enforcement Act of

lis product contains no listed substances known to the State of California o cause cancer, birth defects or other reproductive harm, at levels which ould require a warning under the statute.

S. Toxic Substances Control Act ll components of this product are on the TSCA Inventory or are exempt from 5CA Inventory requirements under 40 CFR 720.30

PA - Domestic Substances List (DSL) ll substances contained in this product are listed on the Canadian Domestic ibstances List (DSL) or are not required to be listed.

## Other Information

commended Uses and Restrictions idustrial solvent for cleaner and coating formulations. EPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 012

ISDS NO: DZ22366

MATERIAL SAFETY DATA SHEET

(AINFRAME UPLOAD DATE: 08/14/06

VERSION: 013

RODUCT: GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO: 682657 PROD NO: 274991

egend /A Not available /W Weight/Weight EL Occupational Exposure Limit TEL Short Term Exposure Limit WA Time Weighted Average WA CCIH American Conference of Governmental Industrial Hygienists, Inc. Dow Industrial Hygiene Guideline OW IHG Workplace Environmental Exposure Level AZ\_DES Hazard Designation FOR ADDITIONAL INFORMATION -----CONTACT: MSDS COORDINATOR UNIVAR USA INC. DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400 OS/21/07 21:11 PRODUCT: 274991 CUST NO: 267665 ORDER NO: 682667 NOTICE ----UNIVAR USA INC("UNIVAR"), EXPRESSLY DISCLAIMS LL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A ARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED EREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR ONSEQUENTIAL DAMGAGES. \*\*

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EPORT NUMBER: 703 ISDS NO: DZZ2366

UNIVAR USA INC. MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 08/14/06

VERSION: 013

PAGE: 013

RODUCT: GLYCOL ETHER EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO: 682667 PROD NO: 274991

RE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO ETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY SSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. HIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT ELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER ROCESS.

\* \* \* END OF MSDS \* \* \* \*



## HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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Univar USA

008 08/30/06 HYDROCHLORIC ACID (HCL) (ALL GRADES)

PRODUCT NAME:

HYDROCHLORIC ACID (HCL) (ALL GRADES)

MSDS NUMBER:

OZ34514

DATE ISSUED:

01/26/2006

SUPERSEDES:

07/01/2005

ISSUED BY:

008820

#### MATERIAL SAFETY DATA SHEET

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Distributed by: Univar USA Inc. 17425 NE Union Hill Road Redmond, WA 98052 425-889-3400

SUBSTANCE: HYDROCHLORIC ACID (HCL) (ALL GRADES)

TRADE NAMES:

Hydrochloric Acid (HCL) 10%, 14%, 20%, 28%, 20 Be, 22 Be, Technical

SYNONYMS:

Muriatic Acid; HCL Solution; Aqueous hydrogen chloride

PRODUCT USE: process chemical, metal cleaning, water purification, petroleum industry

### 2. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=1

HMIS RATINGS (SCALE 0-4): HEALTH=3 FLAMMABILITY=0 REACTIVITY=1

EMERGENCY OVERVIEW: COLOR: colorless

PHYSICAL FORM: liquid ODOR: pungent odor SIGNAL WORD: DANGER

MAJOR HEALTH HAZARDS: CAUSES BURNS TO THE RESPIRATORY TRACT, SKIN, EYES AND GASTROINTESTINAL TRACT. CAUSES PERMANENT EYE DAMAGE. MAY BE HARMFUL OR FATAL IF SWALLOWED.

PHYSICAL HAZARDS: May spatter or generate heat when mixed with water. Contact with metals may evolve flammable hydrogen gas.

PRECAUTIONARY STATEMENTS: Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Wash thoroughly after handling. Use only with adequate ventilation.

### POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: burns, cough, pulmonary edema

LONG TERM EXPOSURE: erosion of teeth

SKIN CONTACT:

SHORT TERM EXPOSURE: burns, ulceration

LONG TERM EXPOSURE: dermatitis

EYE CONTACT:

SHORT TERM EXPOSURE: burns, eye damage, blindness

LONG TERM EXPOSURE: to our knowledge, no effects are known INGESTION:

Univar USA

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: ingestion of harmful amounts is unlikely

CARCINOGEN STATUS:

OSHA: No NTP: No IARC: No

#### 3. COMPOSITION INFORMATION ON INGREDIENTS

COMPONENT: WATER
CAS NUMBER: 7732-18-5
PERCENTAGE: 63-91

COMPONENT: HYDROGEN CHLORIDE

CAS NUMBER: 7647-01-0 PERCENTAGE: 9-36

#### 4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. Discard footwear which cannot be decontaminated. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

NOTE TO PHYSICIAN: The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage. Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: May release toxic gases.

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding fire.

FIRE FIGHTING: Keep unnecessary people away, isolate hazard area and deny entry. Wear NIOSH approved positive-pressure self-contained breathing apparatus. Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Cool containers with water.

SENSITIVITY TO MECHANICAL IMPACT: Not sensitive

SENSITIVITY TO STATIC DISCHARGE: Not sensitive

FLASH POINT: not flammable

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition products or combustion: hydrogen chloride

## 6. ACCIDENTAL RELEASE MEASURES

#### OCCUPATIONAL RELEASE:

Evacuation of surrounding area may be necessary for large spills. Wear appropriate personal protective equipment recommended in Section 8 of the MSDS. Completely contain spilled material with dikes, sandbags, etc. Shut off ventilation system if needed. Reprocess or reuse if possible. Neutralize with soda ash or dilute caustic soda. Collect with appropriate absorbent and place into suitable container. Liquid material may be removed with a vacuum truck. Keep out of water supplies and sewers. This material is acidic and may lower the pH of the surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802 (USA) or (202) 426-2675 (USA).

### 7. HANDLE AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in rubber-lined steel, acid-resistant plastic or glass containers. Keep container tightly closed and properly labeled. Store in a cool, dry place. Store in a well-ventilated area. Do not store in aluminum container or use aluminum fittings or transfer lines. Dike and vent storage tanks. Keep separated from incompatible substances (see Section 10 of the MSDS).

HANDLING: Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. When mixing, slowly add to water to minimize heat generation and spattering.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

#### EXPOSURE LIMITS:

HYDROGEN CHLORIDE, ANHYDROUS:

HYDROGEN CHLORIDE (HYDROCHLORIC ACID):

- 5 ppm (7 mg/m3) OSHA ceiling
- 2 ppm ACGIH ceiling

VENTILATION: Use closed systems when possible. Provide local exhaust ventilation where vapor or mist may be generated. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear safety glasses with side shields. Wear chemical safety goggles with a faceshield or chemical splash hood. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Always place pants legs over boots.

GLOVES: Wear appropriate chemical resistant gloves.

PROTECTIVE MATERIAL TYPES: neoprene, nitrile, polyvinyl chloride (PVC), rubber, Kappler(R) CPF3, Tychem(R)

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: 50 ppm

RESPIRATOR: Where vapor concentration exceeds or is likely to exceed applicable exposure limits, a NIOSH approved respirator with acid gas canister is required. When an air-purifying respirator is not adequate or for spills and/or emergencies of unknown concentrations, a NIOSH approved self-contained breathing apparatus or airline respirator with full-face piece is

required. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
APPEARANCE: clear
COLOR: colorless
ODOR: pungent odor

MOLECULAR WEIGHT: 36.46
MOLECULAR FORMULA: HCL

BOILING POINT: 140-221 F (60.0-105 C) FREEZING POINT: -29 to 5 F (-34 to -15 C) VAPOR PRESSURE: 14.6-80 mmHg @), 20 C

VAPOR DENSITY (air=1): 1.3 20 C SPECIFIC GRAVITY (water=1): 1.05-1.18 BULK DENSITY: 8.75-9.83 lbs/gal

WATER SOLUBILITY: 100%

PH: 2 (0.2% solution) VOLATILITY: 9-36 % by volume

ODOR THRESHOLD: 0.3 ppm (causes olfactory fatigue)

EVAPORATION RATE: <1.00 (butyl acetate=1)

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

#### 10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Contact with water may produce a strong exothermic reaction with spattering. Contact with metals may evolve flammable hydrogen gas. Hydrogen chloride may react with cyanide, forming lethal concentrations of hydrocyanic acid.

INCOMPATIBILITIES: metals, alkalis (such as sodium hydroxide), mercuric sulfate, perchloric acid, carbides of calcium, cesium, rubidium, acetylides of cesium and rubidium, phosphides of calcium and uranium, lithium silicide

### HAZARDOUS DECOMPOSITION:

Thermal decomposition products or combustion: hydrogen chloride

POLYMERIZATION: Will not polymerize.

### 11. TOXICOLOGICAL INFORMATION

## HYDROCHLORIC ACID (HC1) (ALL GRADES):

TOXICITY DATA: Hydrochloric Acid: 900 mg/kg oral-rabbit LD50; 1108 ppm/1 hour(s) inhalation-rat; 3124 ppm/l hour(s) inhalation-rat LC50. Rinsed Draize Test: 5 mg/30 second(s) rabbit-eye mild. Standard Draize Test: 4% / 24 hour(s) skin-human mild. Inhalation will cause severe irritation and possible burns with coughing and choking. If inhaled deeply, edema and hemorrhage of the lungs may occur. Levels of 10-35 ppm may cause irritation of throat and 50-100 ppm is unbearable for 1 hour. Inflammation, destruction of nasal passages and breathing difficulties may occur with higher concentrations and may be delayed in onset. 1000-2000 ppm may be fatal. Prolonged exposure may cause discoloration and/or erosion of teeth. Contact with eyes causes immediate severe irritation with possible burns, permanent visual impairment, or total loss of sight. Contact with fumes or liquid may produce corrosive burns. Dermal exposure also results in irritation, pain, dermatitis, and ulceration. Ingestion may cause immediate burns of the mouth, esophagus, and stomach. Ingestion may cause intense pain, nausea, vomiting, bleeding, circulating collapse, shock and death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory system (including asthma and other breathing disorders)

## 12. ECOLOGICAL INFORMATION

#### ECOTOXICITY DATA:

FISH TOXICITY: Hydrochloric Acid: 178 mg/L LC50 Goldfish (1 to 2 hour survival time); 100-330 mg/L LC50 Shrimp. 3.6 mg/L 48 hour(s) (static) LC50 Bluegill This material is believed to be toxic to aquatic life.

#### FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

PERSISTENCE: This material is believed not to persist in the environment. This material is believed to exist in the disassociated state in the environment. SOIL: Hydrogen chloride will sink into the soil. The acid will dissolve some soil material (in particular, anything with a carbonate base) and will be somewhat neutralized. The remaining portion is thought to transport downward to the water table. WATER: Dissociates almost completely and will be neutralized by natural alkalinity and carbon dioxide.

BIOCONCENTRATION: This material is believed not to bioaccumulate.

## 13. DISPOSAL CONSIDERATIONS

Reuse or reprocess if possible. Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002.

## 14. TRANSPORT INFORMATION

## U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Hydrochloric acid solution

ID NUMBER: UN1789

HAZARD CLASS OR DIVISION: 8

PACKING GROUP: II LABELING REQUIREMENTS: 8

DOT HAZARDOUS SUBSTANCE(S):

Hydrochloric acid 5000 lb(s) (2270 kg(s))

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: SHIPPING NAME: Hydrochloric acid solution

UN NUMBER: UN1789

CLASS: 8

PACKING GROUP/RISK GROUP: II

## 15. REGULATORY INFORMATION

## U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): HYDROGEN CHLORIDE (HYDROCHLORIC ACID): 5000 LBS RQ (liquid)

CHLORINE: 10 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):

HYDROGEN CHLORIDE (HYDROCHLORIC ACID): 500 LBS TPQ (gas)

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes CHRONIC: No FIRE: No REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): HYDROGEN CHLORIDE (HYDROCHLORIC ACID): aerosol form only

This product contains a toxic 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 372. Refer to Section 3.

OSHA PROCESS SAFETY (29CFR1910.119): HYDROGEN CHLORIDE (HYDROCHLORIC ACID): 5000 LBS TQ (gas) CHLORINE: 1500 LBS TO

FDA: This material has Generally Recognized as Safe (GRAS) status under specific FDA regulations. Additional information is available from the Code of Federal Register (CFR) which is accessible on the FDA's website.

## STATE REGULATIONS:

California Proposition 65: This product may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact Customer Service.

NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW: REPORTING REQUIREMENT: WATER 7732-18-5 63-91% HYDROGEN CHLORIDE 7647-01-0 9-36%

RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST: HYDROGEN CHLORIDE 7647-01-0 9-36% CHLORINE 7782-50-5 0-50 ppm

SPECIAL HEALTH HAZARD SUBSTANCE LIST: HYDROGEN CHLORIDE 7647-01-0 9-36%

PENNSYLVANIA RIGHT TO KNOW: REPORTING REQUIREMENT: WATER 7732-18-5 63-91% HYDROGEN CHLORIDE 7647-01-0 9-36%

HAZARDOUS SUBSTANCE LIST: HYDROGEN CHLORIDE 7647-01-0 9-36%

ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST: HYDROGEN CHLORIDE 7647-01-0 9-36%

SPECIAL HAZARDOUS SUBSTANCE LIST: Not regulated.

CANADIAN REGULATIONS: WHMIS CLASSIFICATION: E.

## NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): All the components of this substance are listed on or are exempt from the inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): All components of this product are listed on the

CONTACT:	MSDS COORDINATOR UNIVAR USA INC.	
	DURING BUSINESS HOURS, PACIFIC TIME  NOTICE	(425)889-3400
******		

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\* \* \* END OF MSDS \* \* \*



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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COMMON NAME	Isof	ropyl /	Alcohol			9	An EHS Che	mical	Yes No	12
CAS# 67-6	63-0	10 FIRE CODE	HAZARD CLASSES (	supplied by GGFI	0)					13
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STORAGE PRESSURE		a. AMBIENT	□ b. /	ABOVE AMBIENT		c. BELOW AMB	IENT			27
STORAGE TEMPERAT	URE d	a. AMBIENT	□ b. /	ABOVE AMBIENT		c. BELOW AMB	IENT	d. CRYO	GENIC	28
%WT	HA	AZARDOUS COM	PONENT (For	mixture or was	ste only)		EHS	74 77 77	CAS#	W.)
1 29				-	30	☐ Yes	□ No	31		32
2 29					30	☐ Yes	□ No	31		32
3 29					30	☐ Yes	□ No :	31		32
4 29					30	☐ Yes	□ No :	31	•	32
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			PLACAF	RDING INFO	PRMATION		7 F.F			
UNDOT#	Refer	to shipping papers	or MSDS	33			PA 704 HAZ/	ARD DIAM	OND	
DOT HAZARD CI	ASS C	Refer to shipping p	papers or MSD	ble <sup>34</sup>	-1		CIAL A	WHITE		
EPCRA 🗆 YES	NO			35	·I	L		OX/A	v.	
x	If ED	CDA Blaces C'		25	MA	KE AS MA				200
	II EP	CRA, Please Sign	n riere	36		INVENTO	RY FORM	AS NEED	ED	



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### 1. MATERIAL AND COMPANY IDENTIFICATION

Material Name

Uses

Use as a solvent only in industrial manufacturing processes.

**Product Code** 

S1111

Company

Shell Chemical LP

PO Box 2463

HOUSTON TX 77252-2463

USA

**MSDS** Request

**Customer Service** 

1-800-240-6737 1-866-897-4355

**Emergency Telephone Number** 

Chemtrec Domestic

: 1-800-424-9300

(24 hr)

: 1-703-527-3887

Chemtrec International (24 hr)

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name isopropyl Alcohol CAS No.

Concentration

67-63-0

100.00%

#### 3. HAZARDS IDENTIFICATION

### **Emergency Overview**

Appearance and Odour

: Clear, Liquid, Characteristic.

Health Hazards

Vapours may cause drowsiness and dizziness. Irritating to

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

Vapours may cause drowsiness and dizziness.

Skin Contact Eye Contact

Repeated exposure may cause skin dryness or cracking.

Signs and Symptoms

irritating to eyes. 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. Other signs and symptoms of central nervous system (CNS) depression may

include headache, nausea, and lack of coordination.

**Aggravated Medical** 

Condition

Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this

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material: Eyes. Skin.

#### 4. FIRST AID MEASURES

General Information

In general no treatment is necessary, however, obtain medical

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.

Eve Contact

Immediately flush eyes with large amounts of water for at least

15 minutes while holding eyelids open. Transport to the

ingestion

nearest medical facility for additional treatment.

If swallowed, do not induce vomiting; transport to nearest medical facility for additional treatment. If vomiting occurs

spontaneously, keep head below hips to prevent aspiration.

Advice to Physician

Causes central nervous system depression. Consult a Poison

Control Centre for guidance.

#### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Flash point

12 °C / 54 °F (Abel)

Explosion / Flammability

2 - 12 %(V)

limits in air

Auto ignition temperature

: 425 °C / 797 °F (ASTM D-2155)

Specific Hazards

Carbon monoxide may be evolved if incomplete combustion

occurs. The vapour is heavier than air, spreads along the

**Extinguishing Media** 

ground and distant ignition is possible. 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.

Unsultable Extinguishing

Media

Do not use water in a jet.

Protective Equipment for

**Firefighters** 

Wear full protective clothing and self-contained breathing

apparatus.

Additional Advice

Keep adjacent containers cool by spraying with water.

#### 6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

Protective measures

: Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent



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from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

Clean Up Methods

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe

to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove

contaminated soil and dispose of safely.

Additional Advice

See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapour may form an explosive mixture with air.

## 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

Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<= 10 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Extinguish any naked flames. Do Not smoke. Remove ignition sources. Avoid sparks, Handling Temperature: Ambient.

Storage

Keep away from aerosols, flammables, oxidizing agents, corrosives and from products harmful or toxic to man or to the environment. Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Storage Temperature: Ambient.

**Product Transfer** 

Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.

Recommended Materials

For container paints, use epoxy paint, zinc silicate paint. For containers, or container linings use mild steel, stainless steel.

Unsuitable Materials Container Advice Aluminium if > 50 °C. Most plastics. Neoprene rubber,
 Containers, even those that have been emptied, can contain

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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
isopropyl Alcohol	ACGIH	TWA	200 ррт		
	ACGIH	STEL	400 ppm		
	OSHA Z1	PEL	400 ppm	980 mg/m3	
	OSHA Z1A	TWA	400 ppm	980 mg/m3	
	OSHA Z1A	STEL	500 ppm	1,225 mg/m3	

L	OSHA Z1	PEL	400 ppm	980 mg/m3	
	OSHA Z1A	TWA	400 ppm	980 mg/m3	
	OSHA Z1A	STEL	500 ppm	1,225 mg/m3	
Additional l	Information	wen	e established in th hands before	as Interim Standa 1989 and later re	irds, the OSHA PELs that escinded, smoking and using the
Exposure C		depe base Appi venti vexe	ending upon po ed on a risk ass ropriate measui ilation to contro	tential exposure of essment of local res include: Adeq l airborne concen	controls necessary will vary conditions. Select controls circumstances, uate explosion-proof strations below the les and showers for
Personal Pr Equipment Respiratory		: Pers reco : If en to a respi cond respi mask vapo air-fil	onal protective mmended natic gineering control evel which is a ratory protectio itions of use an ratory protective rators are suitated and filter. Selecting respirators tering respirators to the respirators are suitated and filter.	ols do not maintai dequate to protect n equipment suita d meeting releval e equipment supp ble, select an app ect a filter suitable nt >65°C (149°F) rs are unsuitable	heck with PPE suppliers, in airbome concentrations it worker health, select able for the specific nt legislation. Check with pliers. Where air-filtering propriate combination of a for organic gases and airbome (e.g., airbome)
Hand Protec	tion	space : Long conta and c and c glove	<ul> <li>a) use appropriser term protection</li> <li>b) Splash protection</li> <li>c) Splash protection</li> <li>d) Indian protection</li> <li>e) Indian pro</li></ul>	ate positive press on: Natural rubbe ction: Neoprene ove is dependent act, chemical resi terity. Always see	in deficiency, confined sure breathing apparatus. Fr. Butyl rubber. Incidental rubber. Viton. Suitability on usage, e.g. frequency stance of glove material, ek advice from glove
Eye Protection Protective Ci		suppi : Chem : Use p	iers. Contamina nical splash gog protective clothi rial. Safety sho	ated gloves shoul Igles (chemical m ng which is chem	d be replaced.

Monitoring Methods

resistant. Monitoring of the concentration of substances in the breathing

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zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of analytical Methods

http://www.cdc.gov/niosh/nmam/nmammenu.html Occupational Safety and Health Administration (OSHA), USA: Sampling and

Analytical Methods http://www.osha-

sic.gov/dts/sltc/methods/toc.html Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous

Substances http://www.hsl.gov.uk/search.htm

**Environmental Exposure** Controls

Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Odour

Clear. Liquid. Characteristic.

Boiling point

82 - 83 °C / 180 - 181 °F

Melting / freezing point

-88 °C / -126 °F 12 °C / 54 °F (Abel)

Flash point

Explosion / Flammability 2 - 12 %(V)

limits in air

Auto-ignition temperature

Vapour pressure Specific gravity

: 425 °C / 797 °F (ASTM D-2155)

4,100 Pa at 20 °C / 68 °F : 0.78 - 0.79 at 20 °C / 68 °F

Water solubility Vapour density (air=1)

: Completely miscible. 2 at 20 °C / 68 °F

Volatile organic carbon

content

: 100 %

Evaporation rate (nBuAc=1)

: 1.5 (ASTM D 3539, nBuAc=1)

## 10. STABILITY AND REACTIVITY

**Stability** 

: Stable under normal conditions of use. Reacts with strong

oxidising agents, Reacts with strong acids.

Conditions to Avoid Materials to Avoid

Avoid heat, sparks, open flames and other ignition sources.

Hazardous Decomposition

Strong oxidising agents. Strong acids.

**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



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**Acute Dermal Toxicity Acute Inhalation Toxicity**  Low toxicity: LD50 >2000 mg/kg , Rabbit Low toxicity: LC50>5000 ppm / 1 hours, Rat

High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or

death.

Skin Irritation

Not irritating to skin.

Prolonged/repeated contact may cause defatting of the skin

which can lead to dematitis.

Eye irritation

Irritating to eyes.

Respiratory Irritation

Inhalation of vapours or mists may cause irritation to the

respiratory system.

Sensitisation Repeated Dose Toxicity Not a skin sensitiser. Kidney: caused kidney effects in male rats which are not

considered relevant to humans

Material	T :	Carcinogenicity Classification
Isopropyl Alcohol	:	ACGIH Group A4: Not classifiable as a human carcinogen.
Isopropyl Alcohol	1:	IARC 3: Classification not possible from current data.

Reproductive and **Developmental Toxicity** 

Causes foetotoxicity in animals at doses which are maternally

toxic.

Additional Information

Exposure may enhance the toxicity of other materials.

## 12. ECOLOGICAL INFORMATION

Acute Toxicity

Fish

Low toxicity: LC/EC/IC50 > 100 mg/i

Aquatic invertebrates Algae

Low toxicity: LC/EC/IC50 > 1000 mg/l

Microorganisms

Expected to have low toxicity: LC/EC/IC50 > 1000 mg/l

Low toxicity: LC/EC/IC50 > 1000 mg/l

Mobility

Dissolves in water.

If product enters soil, it will be highly mobile and may

contaminate groundwater.

Persistence/degradability

Readily biodegradable meeting the 10 day window criterion.

Oxidises rapidly by photo-chemical reactions in air.

Bioaccumulation

Not expected to bioaccumulate significantly.

## 13. DISPOSAL CONSIDERATIONS

Material Disposal

Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper

waste classification and disposal methods in compliance with applicable regulations.

Container Disposal

Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send

to drum recoverer or metal reclaimer.

Local Legislation

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may



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be more stringent than regional or national requirements and must be complied with.

## 14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

Identification number

**UN 1219** 

Proper shipping name

Isopropanol

Class / Division

3

Packing group

II

**Emergency Response Guide** 

129

No.

IMDG

Identification number

UN 1219

Proper shipping name

ISOPROPANOL

Class / Division

Packing group

11

Marine pollutant:

No

IATA (Country variations may apply)

Identification number

**UN 1219** 

Proper shipping name

Isopropanol

Class / Division Packing group

3 11

## 15. REGULATORY INFORMATION

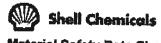
The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

## Federal Regulatory Status

## Notification Status

AIC\$	Listed.	
DSL	Listed.	
INV (CN)	Listed.	
ENCS (JP)	Listed.	(2)-207
ISHL (JP)	Listed.	2-(8)-319
TSCA	Listed.	- (0, 0.0
EINECS	Listed.	200-661-7
KECI (KR)	Listed.	KE-29363
PICCŠ (PH)	Listed.	

SARA Hazard Categories (311/312)



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1910.1200

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

Isopropyl Alcohol (67-63-0) 100.00%

Listed.

## Pennsylvannia Right-To-Know Chemical List

Isopropyl Alcohol (67-63-0) 100.00%

Environmental hazard. Listed.

#### 16. OTHER INFORMATION

NFPA Rating (Health,

Fire, Reactivity)

**MSDS Version Number** 

: 1, 3, 0

: 19.2

**MSDS Effective Date** 

: 05/10/2005

**MSDS Revisions** 

A vertical bar (I) in the left margin indicates an amendment

from the previous version.

**MSDS** Regulation

The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Uses and Restrictions

Use as a solvent only in industrial manufacturing processes.

**MSDS Distribution** 

The information in this document should be made available to

all who may handle the product

Disclaimer

The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

Γ	FACILITY ID# 3	ADD O	DELE	TE 🔀	REVISED 1	NESS NAME		4 -		Page	10 of	19	_
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.				100	II. CHEMI	CAL INFO	DRMATION	/ (SQE	W.C. Street	V., 61			7
L	COMMON NAME	ene G	Kol.E	ther	5_		WASTE	Yes	1	E SECRET	Yes instructions	No No	11
L	CAS#	HYC	250 V	1	B				9 An EH	S Chemical	Yes	No	12
L	57018	3-52-	7 10 FIRE C	ODE HAZARD C	LASSES (supplie	ed by GGFD)			1 TI EHS	is "Yes", al	amounts must be	LBS	13
OLD OLD	YPE (Check one item on	a. PL	JRE 🔲 b. MI	XTURE	C. WASTE	14 F	RADIOACTIVE	Yes	<b>⊠</b> No	15 CU	RIES		16
C	HYSICAL STATE heck one Item only)	□ a. Sc	DLID <b>X</b> b. LIC	SOID C	GAS 17	FED HAZA CATEGOR	IES La.	FIRE C	b. REACTIN		PRESSURE RE		18
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1	. 29						30	☐ Yes		31	CA	S #	
2	29					12-72-11-31-31	30	Yes	□ No	31			32
3	29						30	☐ Yes	□ No	31			32
4	29						30	☐ Yes	□ No	31			32
5	29	-				19-00-00	30	☐ Yes		31	-		32
u mo	a nazardous compon	ents are present	at greater than 1% by v	veight if non-carc	inogenic, or 0.1%	by weight if c	arcinogenic, atta	ch additional	sheets of pape	r capturing t	he required inform	ation.	$\exists$
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007 10/14/05 ARCOSOLV PTB PRODUCT NAME: MSDS NUMBER:

AR000372

DATE ISSUED:

03/14/2005

ARCOSOLV PTB

SUPERSEDES:

01/16/2002

ISSUED BY:

008750

\* \*

Material Safety Data Sheet

SECTION 1: IDENTIFICATION

Product Name: ARCOSOLV PTB

Product Number: 000000000000499228

Internal ID: 2781

Chemical Family: Propylene Glycol Ethers

CAS Number: 57018-52-7

Chemical Name: Propylene Glycol t-Butyl Ether

Synonyms: 1-T-Butoxy-2-Propanol, Propylene Glycol t-Butyl Ether, 1-(1,1-

Manufacturer

Business Contact

Lyondell Chemical Company One Houston Center, Suite 700

Customer Service 888 777-0232 Product Safety 800 700-0946 1221

McKinney St. P.O. Box 2583

Houston Texas 77252-2583

24 Hour Emergency Contact CHEMTREC 800 424-9300 LYONDELL 800-245-4532

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Component Name

EU

Concentration

1-tert-Butoxy-2-Propanol

CAS # 57018-52-7 ELINCS

Inventory Wt.&\* > 99.0

Risk Symbol

406-180-0

R10, R41 Xi

\* Concentration of gaseous products or materials is given in Mole % Compositions given are typical values not specifications.

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview

This material is HAZARDOUS by OSHA Hazard Communication definition.

Signal Word WARNING.

Flammable liquid. Severe eye irritant. Mild skin irritant. May cause central

NFPA

Health: 1 Flammability: 2 Reactivity:

HMIS

Health: Flammability: 2 Reactivity:

Physical State Liquid.

Color Clear, colorless.

Odor Ether-like odor.

Odor Threshold No value available.

Potential Health Effects Routes of Exposure Eye Skin. Inhalation

Signs and Symptoms of Acute Exposure See component summary.

1-tert-Butoxy-2-Propanol 57018-52-7 Mild skin irritant. May cause central nervous system depression.

### Skin

May be mildly irritating to the skin. Not a sensitizer. Not expected to be a

## Inhalation

High vapor concentrations may cause central nervous system (CNS) depression with symptoms such as nausea, dizziness, weakness, headache, loss of coordination, loss of consciousness, coma and death.

Irritation can range from slight to severe. Severe irritation may result in corneal opacity, redness, inflammation of the iris and swelling of the

## Ingestion

Ingestion of high doses may cause discomfort and irritation of the gastrointestinal tract and CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-

Chronic Health Effects See component\_summary.

1-terf-Butoxy-2-Propanol 57018-52-7

Long term inhalation exposure to PTB vapor was associated with an increased incidence of liver tumors in male and female mice and a marginally increased incidence of liver and kidney tumors in male rats. The relevance of these findings to humans is unknown. The International Agency for Research on Cancer (IARC) has evaluated this material as an IARC Group 3 not classifiable as to carcinogenicity in humans. Limited data in animals and inadequate data

Conditions Aggravated by Exposure No known conditions are aggravated by this material.

## SECTION 4: FIRST AID MEASURES

### General

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 3 of this MSDS.

#### Skin

Remove contaminated clothing as needed. Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

If overcome by exposure, remove victim to fresh air immediately. Prompt action is essential. Give oxygen or artificial respiration as needed. Obtain

Immediately flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower lids. If pain or irritation persists, promptly obtain medical attention.

## Ingestion

If large quantity swallowed, give lukewarm water (pint/ 1/2 litre) if victim completely conscious/alert. Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.

## Note to Physician

No detoxification information available. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties

Classification OSHA/NFPA Class II combustible liquid.

Flash Point:

44 deg C (111.2 deg F) (Closed Cup)

Auto-Ignition Temperature 373 deg C (703.4 deg F)

Lower Flammable Limit 1.8 vol%

Upper Flammable Limit 6.8 vol%

## Extinguishing Media

Suitable: SMALL FIRE: Use dry chemicals, CO2, water spray or alcoholresistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam. SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.

Unsuitable: Do not use solid water stream. Do not use solid water stream.

Protection of Firefighters Protective Equipment/Clothing: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will

Fire Fighting Guidance: Fine sprays/mists may be combustible at temperatures below normal flash point. When heated above the flash point, releases flammable vapors. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fight fire from maximum distance or use unmanned hose holders

or monitor nozzles. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Blanket with alcohol-resistant foam. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Fine sprays/mists may be combustible at temperatures below normal flash point. When heated above the flash point, releases flammable vapors. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Blanket with alcohol-resistant foam. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Hazardous Combustion Products: Thermal decomposition may produce carbon monoxide and other toxic vapors.

# SECTION 6: ACCIDENTAL RELEASE MEASURES

Release Response

Flammable liquid. Eliminate all sources of ignition. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other noncombustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Dike large spills and place materials in salvage containers. Water spray may reduce vapor; but may not prevent ignition in closed spaces. Flammable liquid. Eliminate all sources of ignition. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Dike large spills and place materials in salvage containers. Water spray may reduce vapor; but may not prevent ignition in closed spaces.

## SECTION 7: HANDLING AND STORAGE

Handling

For industrial use only. Keep container tightly closed when not in use. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Use only non-sparking tools. Properly ground containers before beginning transfer. When transferring propylene glycol ethers with flash points at or below 60 deg C (140 deg F) into fixed site vessels, the vessel should be purged and inerted prior to transfer. Propylene glycol ethers may be transferred into air atmospheres if the temperature of the product and the ambient temperature within the shipping container are both at least 16.7 deg C (30 deg F) less than the product's flash point. After loading, nitrogen blanketing is required if the contents of the transportation container could exceed a temperature of 16.7 deg C (30 deg F) less than the product flash point during any subsequent transportation activities. If the product flash point is less than 16.7 deg C (30 deg F) above either the ambient temperature of the transportation container or the storage temperature of the product, the container should be purged and inerted with nitrogen prior to loading and nitrogen blanketed after loading. Handle empty containers with care. Flammable/combustible residue remains after emptying. The purging of all empty shipping containers, regardless of the flashpoint, is recommended when received with air atmospheres. Isolate, vent, drain, wash and purge systems or equipment before maintenance or

repair. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry. For industrial use only. Keep container tightly closed when not in use. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Use only non-sparking tools. Properly ground containers before beginning transfer. When transferring propylene glycol ethers with flash points at or below 60 deg C (140 deg F) into fixed site vessels, the vessel should be purged and inerted prior to transfer. Propylene glycol ethers may be transferred into air atmospheres if the temperature of the product and the ambient temperature within the shipping container are both at least 16.7 deg C (30 deg F) less than the product's flash point. After loading, nitrogen blanketing is required if the contents of the transportation container could exceed a temperature of 16.7 deg C (30 deg F) less than the product flash point during any subsequent transportation activities. If the product flash point is less than 16.7 deg C (30 deg F) above either the ambient temperature of the transportation container or the storage temperature of the product, the container should be purged and inerted with nitrogen prior to loading and nitrogen blanketed after loading. Handle empty containers with care. Flammable/combustible residue remains after emptying. The purging of all empty shipping containers, regardless of the flashpoint, is recommended when received with air atmospheres. Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry.

#### Storage

Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents. Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides. Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper. Aluminum (5000 series alloys - Ú.S. Aluminum Association Standard) showed no corrosion after 30 days contact with ARCOSOLV. PM Acetate, ARCOSOLV. DPM, TPM, PTB, or PM at 71 deg C (160 deg F). Some plastics/rubbers are attacked by Glycol Ethers/Ether Esters. This product will absorb water if exposed to air.

# SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls Either local exhaust or general room ventilation is usually required. Either local exhaust or general room ventilation is usually required.

## Personal Protection

## Inhalation

A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace

Wear chemical resistant gloves such as: Neoprene. Wear chemical resistant gloves such as: Neoprene. Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. The equipment must be cleaned thoroughly after each use. Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. The equipment must be cleaned thoroughly after each use.

Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to splashing/spraying liquid, airborne particles, or vapor. Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to splashing/spraying liquid, airborne particles, or vapor.

Additional Remarks

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

Occupational Exposure Limits

Component Source/

Name

1-tert-Butoxy-2-Propanol Value Type Notation US (ACGIH) N/L

US (OSHA) N/L

# SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid. Clear, colorless. Odor:

Ether-like odor. Odor Threshold: No value available.

Not applicable.

Boiling Point/Boiling Range: - 151 deg C (303.8 deg F) @ 760 mm Hg

Freezing Point/Melting Point: No Data Available.

Flash Point: - 44 deg C (111.2 deg F) (Closed Cup) Auto-ignition:

- 373 deg C (703.4 deg F) Flammability:

OSHA/NFPA Class II combustible liquid. Lower Flammable Limit:

- 1.8 vol% Upper Flammable Limit: - 6.8 vol%

Explosive Properties: No Data Available. Oxidizing Properties: No Data Available. Vapor Pressure:

- 4.8 mm Hg @ 25 deg C (77 deg F) Evaporation Rate:

- 0.3 (butyl acetate = 1)

Relative Density:

- 0.870 @ 25 deg C (77 deg F) Viscosity: - 4 mPa.s @ 25 deg C (77 deg F) (Brookfield). Solubility (Water):

Appreciable (10 Percent or more). Partition Coefficient (Kow):

Log Kow = 0.73

Additional Physical and Chemical Properties: Hygroscopic. Volatile Characteristics:

Slight: 0.1 to 1.0%

No additional information available.

## SECTION 10: STABILITY AND REACTIVITY

Chemical Stability Stable.

## Conditions to Avoid

Extended contact with air or oxygen. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Heat, sparks, open flame, other ignition sources, and oxidizing conditions. Ignition may occur at temperatures below those published in the literature as

## Substances to Avoid

May react with oxygen to form peroxides. However, there is no known evidence that it has nearly the peroxide forming potential as, for example, diethyl ether, etc. Dehydrating agents. Strong oxidizing agents.

## Decomposition Products

Incomplete combustion carbon monoxide, carbon dioxide and other toxic gases.

Hazardous Polymerization Not expected to occur.

Reactions with Air and Water
May react with oxygen to form unstable peroxides. Peroxides are thermally
unstable and shock sensitive. However, there is no known evidence that it has
nearly the peroxide forming potential as, for example, diethyl ether, etc.

SECTION 11: TOXICOLOGICAL INFORMATION

#### PRODUCT INFORMATION

Product Summary

Propylene glycol mono-t-butyl ether (PTB) is of low acute toxicity. It is a mild skin irritant, but not a skin sensitizer. Neat liquid is a severe eye irritant; however, a dilute aqueous solution is at most, slightly irritating. PTB is of low inherent toxicity in rats and mice after repeated inhalation exposures. Repeated exposure of rats and mice to PTB vapors produced liver effects indicative of increased metabolism of the PTB, while male rats exhibited sex- and species-specific kidney effects that are not considered relevant to humans. PTB is not a teratogen and no adverse effect on reproductive performance was apparent in rats exposed continuously to high vapor concentrations throughout one generation. Very slight effects on offspring survival and pup body weights were noted in pups from highly exposed dams. The weight of evidence suggests that PTB is not genotoxic in vitro. A weakly mutagenic response was noted in female mice from a mouse peripheral blood micronucleus assay while male mice were negative in the same study. Long term inhalation exposure to PTB vapor was associated with an increased incidence of liver tumors in male and female mice and a marginally increased incidence of liver and kidney tumors in male rats. The International Agency for Research on Cancer (IARC) found inadequate human evidence and limited animal evidence of carcinogenicity for PTB and therefore PTB was placed in IARC#s Group 3 as not classifiable as to its carcinogenicity to humans.

### COMPONENT INFORMATION

1-tert-Butoxy-2-Propanol 57018-52-7

Acute Toxicity - Lethal Doses

LC50 (Inhl) Rat > 550 PPM 4 HOURS

LD50 (Oral) Rat 3771 MG/KG BWT LD50 (Skin) Rabbit > 2000 MG/KG BWT

Acute Toxicity Effects

### Inhalation

May produce symptoms of central nervous system depression including headache, dizziness, nausea, loss of sense of balance, drowsiness, visual disturbances, unconsciousness and sense of balance, drowsiness, visual disturbances, unconsciousness and death.

## Ingestion

High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).

## Skin Contact

Not expected to be a skin absorption hazard.

#### Irritation

Skin Contact may cause mild skin irritation.

Irritation can range from slight to severe. Neat liquid may produce severe eye irritation. A 20% solution of PTB in water was, at most, slightly irritating to the eye. Severe irritation may result in corneal opacity, redness, inflammation of the iris and swelling of the conjuctiva.

Sensitization Not expected to be a sensitizer.

Target Organ Effects
Eye. Skin. Central nervous system effects.

Repeated Dose Toxicity
PTB is of low inherent toxicity following repeated inhalation exposure.
Effects observed in male rats that inhaled high concentrations of PTB included a species- and sex-specific kidney toxicity mediated by a-2u-globulin nephropathy, a mechanism that is not relevant to humans. Liver changes indicative of an adaptive response to metabolizing PTB were observed in rats and mice.

Reproductive Effects

No adverse effect on reproductive performance was seen in male and female rats exposed by oral gavage with PTB in a one-generation reproductive toxicity study. Very slight effects on pup body weights and survival were noted in pups from dams exposed to 1000 mg/kg bwt/day of PTB.

Developmental Effects
Results from studies in pregnant rats and rabbits demonstrate PTB is not teratogenic or fetotoxic.

Genetic Toxicity
Based on the weight of evidence, PTB is not considered to be genotoxic in vitro. A weakly mutagenic response was noted in female mice from a mouse peripheral blood micronucleus assay while male mice were negative in the same study.

Carcinogenicity
Long term inhalation exposure to PTB vapor was associated with an increased incidence of liver tumors in male and female mice and a marginally increased incidence of liver and kidney tumors in male rats. Studies suggest that the rat kidney toxicity and subsequent tumors are due to a species and sexspecific mechanism and not relevant to humans. The weight of evidence from genotoxicity testing suggests that a non-genotoxic mechanism was most likely involved in the development of the rodent liver tumors. PTB is not classified for carcinogenicity by OSHA, NTP or the EPA. The International Agency for Research on Cancer (IARC) found inadequate human evidence and limited animal evidence of carcinogenicity for PTB and therefore was placed in IARC's Group 3 as not classifiable as to its carcinogencity to humans.

SECTION 12: ECOLOGICAL INFORMATION

PRODUCT INFORMATION

Ecotoxicity

This material is expected to be non-hazardous to aquatic species. See component summary. Toxicity to microorganisms

Summary: Not toxic to microbes in activated sludge at 100 mg/L.

Chronic toxicity to aquatic invertebrates

Summary: Not expected to exhibit chronic toxicity to aquatic invertebrates.

Environmental Fate and Pathway Expected to have high mobility in soils. Not expected to volatilize from surface waters. Not likely to adsorb to suspended solids and sediment in water. Hydrolysis is not expected to be an important factor in the environmental fate process for this material.

Persistence and Degradability
Biodegradation: This material is expected to be inherently biodegradable.

Bioaccumulation: This material is not expected to bioaccumulate.

### COMPONENT INFORMATION

1-tert-Butoxy-2-Propanol 57018-52-7

Ecotoxicity

This material is expected to be non-hazardous to aquatic species.

Acute toxicity to fish LC50 / 96 HOUR rainbow trout. > 1,000 mg/L LC50 / 96 HOUR bluegill sunfish > 1,000 mg/L

Summary: This material is not classified as harmful or toxic to fish.

Acute toxicity to aquatic invertebrates LC50 / 48 HOUR Daphnia magna. > 1,000 mg/L

Summary: This material is not classified as harmful or toxic to invertebrates.

Toxicity to aquatic plants EC50 / 96 HOUR algae > 1,000 mg/L

Summary: This material is not classified as harmful or toxic to algae or higher aquatic plants. Toxicity to microorganisms

Summary: Not toxic to microbes in activated sludge at 100 mg/L

Chronic toxicity to fish

Summary: No Data Available.

Chronic toxicity to aquatic invertebrates EC50 / 21 DAY Daphnia magna. > 100 mg/L

Summary: Not expected to exhibit chronic toxicity to aquatic invertebrates.

Environmental Fate and Pathway

Expected to have high mobility in soils. Not expected to volatilize from surface waters. Not likely to adsorb to suspended solids and sediment in water. Hydrolysis is not expected to be an important factor in the environmental fate process for this material.

Persistence and Degradability 40.1tw
Biodegradation: This material is expected to be inherently biodegradable.
Bioaccumulation: Estimated BCF = 3.162 This material is not expected to bioaccumulate.

SECTION 13: DISPOSAL CONSIDERATIONS

Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes. Comply with applicable federal, state, and local regulations.

SECTION 14: TRANSPORT INFORMATION

Special Requirements
If you reformulate or further process this material, you should consider reevaluation of the regulatory status of the components listed in the

#### AGU 18VIIIO

composition section of this sheet, based on final composition of your product.

Proper Shipping Name Flammable liquids, n.o.s. (1-T-BUTOXY-2-PROPANOL)

ID No.

UN1993

Hazard Class

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PG

III

## SECTION 15: REGULATORY INFORMATION

### Regulatory Status

Country Australia	Inventory AICS		
Canada Canada China European Union	DSL NDSL IECS EINECS	x x x	X = All components are included or are otherwise exempt from inclusion on this inventory.
European Union European Union Japan Korea Philippines United States	ELINCS NLP ENCS ECL PICCS TSCA	X X X X	<pre>C = Contact Lyondell/Equistar by e-mail at productsafety@lyondell.com or product.safety) equistarchem.com for additional information.</pre>

If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

### SARA 302/304

No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

### SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Immediate (Acute) Health Hazard. Fire Hazard.

#### SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

### Component

## Reporting Threshold

## State Reporting

This product contains the following ingredients for which the state of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute:

Propylene glycol mono-t-butyl ether, Carcinogen

Massachusetts Substances List (MSL) – Extraordinarily hazardous substances must be identified when present in materials at levels greater than state specified criterion. The criterion is  $\geq$  0.0001%. Hazardous Substances (MSL-HS) on the MSL must be identified when present in materials at greater than the state specified criterion. The criterion is  $\geq$  1%. Components with CAS numbers present in this material, at levels specified in Section 2 – Composition do not require reporting under the statute.

Special Hazardous Substances (PA-SHS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is  $\geq 0.01\%$ . Hazardous Substances (PA-HS) must be identified when present in

materials at levels greater than the state specified criterion. The criterion is >= 1%. Environmental Hazards (PA-EH) must be identified when present in materials at levels greater than the state specified criterion. The criterion is >= 0.01%. Components with CAS numbers present in this material, at levels specified in Section 2 - Composition, do not require reporting under the statute.

CONTACT: MSDS COORDINATOR UNIVAR USA INC.  DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400
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\* \* \* END OF MSDS \* \* \*



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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Univar USA Inc. 17425 NE Union Hill Road Redmond, WA 98052 (425) 889-3400

For Emergency Assistance involving chemicals call - CHEMTREC (800) 424-9300

The	Version	Date	and	Number	for	this	MSDS	is	:	01/09/2007	-	#002	
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PRODUCT NAME:

METHANOL

MSDS#:

EZ64835

DATE ISSUED:

09/30/2003

SUPERSEDES:

NEW

ISSUED BY:

009292

This MSDS was reviewed on 01/09/2007, and is

current as of the DATE ISSUED above.

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name

Methanol

Distributed by: Univar USA Inc. 17425 NE Union Hill Road Redmond, WA 98052 425-889-3400

Chemical Name
Synonym(s)
Molecular Formula
Molecular Weight
Product Use
OSHA Status

methanol 982893 CH4O 32.04 solvent

hazardous

For emergency transportation information, call CHEMTREC at 800-424-9300

2. COMPOSITION INFORMATION ON INGREDIENTS

(Typical composition is given, and it may vary. A certificate of analysis can be provided, if available.)

Weight % Component CAS Registry No. 100% methanol 67-56-1

#### 3. HAZARDS IDENTIFICATION

#### DANGER

FLAMMABLE LIQUID AND VAPOR
MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED
CANNOT BE MADE NONPOISONOUS - VAPOR HARMFUL
HARMFUL IF ABSORBED THROUGH SKIN

HMTS(R) Hazard Ratings: Health - 2\*, Flammability -3, Chemical Reactivity - 0

HMIS(R) rating involves data interpretations that may vary from company to company. They are intended only 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 considered.

#### 4. FIRST-AID MEASURES

#### Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.

#### Eyes:

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

#### Skin:

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

#### Ingestion:

Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

Note to Physicians: Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

#### 5. FIRE FIGHTING MEASURES

#### Extinguishing Media:

Water spray, dry chemical, carbon dioxide, alcohol foam

#### Special Fire-Fighting Procedures:

Wear self-contained breathing apparatus and protective clothing.
Use water spray to keep fire-exposed containers cool. Water may be ineffective
in fighting the fire.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide

Page 3 of 7

#### · UNIVAR USA - MSDS

Unusual Fire and Explosion Hazards: Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations.

Sensitivity to Static Discharge: Material is unlikely to accumulate a static charge which could act as an ignition source.

#### 6. ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment. Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Use water spray to disperse vapors and dilute spill to a nonflammable mixture.

Prevent runoff from entering drains, sewers, or streams.

#### 7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from heat, sparks, and flame. Keep from contact with oxidizing materials. Use only with adequate ventilation. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

#### Storage:

Keep container tightly closed and in a well-ventilated place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Country specific exposure limits have not been established or are not applicable unless listed below.

#### METHANOL

US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 200 ppm,
US. ACGIH Threshold Limit Values
Short Term Exposure Limit (STEL): 250 ppm,
US. ACGIH Threshold Limit Values
Skin designation: Can be absorbed through the skin.
METHYL ALCOHOL
US. NIOSH: Pocket Guide to Chemical Hazards
Recommended exposure limit (REL): 200 ppm, 260 mg/m3
US. NIOSH: Pocket Guide to Chemical Hazards

Short Term Exposure Limit (STEL): 250 ppm, 325 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Skin designation: Can be absorbed through the skin.

METHYL ALCOHOL; METHANOL

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Time Weighted Average (TWA) Permissible Exposure Limit (PEL): 200 ppm,

260 mg/m3

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Ceiling Limit Value: 1,000 ppm,

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Short Term Exposure Limit (STEL): 250 ppm, 325 mg/m3

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Skin designation: Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) PEL: 200 ppm, 260 mg/m3

#### Ventilation:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

#### Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: full-face positive-pressure air-supplied

#### Eye Protection:

Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

#### Skin Protection:

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Recommended Decontamination Facilities: Eye bath, washing facilities, safety shower

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Color: Liquid Colorless

Odor:
Odor Threshold:

Sweet, alcohol

Specific Gravity:

0.79 (20 C) 21 C; 133 mbar

Vapor Pressure: Vapor Density: Freezing Point:

1.1 -98 C 65 C

Boiling Point: Evaporation Rate:

2.6 (n-butyl acetate = 1 Evaporation Rate: 0.2

(diethyl ether = 1 )

Viscosity:

0.58 mPa.s (20 C) ,

Solubility in Water:

Complete

pH:

Not applicable

Octanol/Water Fartition Coefficient: P: 0.17; log P: -0.77

Flash Point: 10 C (Tag closed cup)

Lower Flammable Limit: 6.61 %(V)
Upper Flammable Limit: 36.5 %(V)

Autoignition Temperature: 446 C (ASTM D2155)

Thormal Decomposition Temperature: (DTA) No exotherm to boiling

10.STABILITY AND REACTIVITY

Stability: Stable.

Incompatibility:

Material reacts with strong acids, strong bases. Material reacts violently with strong oxidizing agents

Mazardous Polymerization: Will not occur.

#### 11. TOXICOLOGICAL INFORMATION

#### General:

Prolonged and repeated exposure to high vapor concentrations, skin absorption or ingestion of methanol may result in visual disturbances, metabolic acidosis, headache, giddiness, nausea, insomnia, gastric disturbance, dizziness, and slow breathing. There have been severe cases reported of blindness, coma and death due to the ingestion of methanol. Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

Oral LD-50: (rat) 6.2 g/kg

Inhalation LC-50: (rat) 8 h: > 22500 ppm

Dermal LD-50: ( rabbit) 15.8 g/kg Skin Irritation (guinea pig) moderate Eye Irritation (rabbit) slight

#### 12. ECOLOGICAL INFORMATION

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

## Oxygen Demand Data:

BOD-5: 0.76 - 1.12 g/g BOD-20: 1.26 g/g

COD: 1.05 - 1.5 g/g

Acute Aquatic Effects Data:

96 h LC-50 (fathead minnow): > 10000 microliter(s)/1 NOEC: 10000 microliter(s)A

96 h LC-50 (sideswimmer): > 100 microliter(s)/1 NOEC: 100 microliter(s)/1

24 h EC-50 (daphnid): > 10000 mg/I

96 h LC-50 (daphnid): > 1000 microliter(s)/1 NOEC: 100 microliter(s)/1

96 h LC-50 (ramshorn snail): > 100 microliter(s)A NOEC: 100 microliter(s)/l

96 h LC-50 (aquatic earthworm): > 100 microliter(s) A NOEC: 100 microliter(s) A

96 h LC-50 (pill bug): > 100 microliter(s)A NOEC: 100 microliter(s)/1

96 h LC=50 (flatworm): > 100 microliter(s)/I NOEC: 100 microliter(s)/1

#### 13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or

local laws. Mix with compatible chemical which is less flammable and incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

#### 14. TRANSPORT INFORMATION

Marine pollutant components: None unless listed below

Reportable Quantity: 2,270 kg
DOT (USA): Class 3 Packing group II
ICAO Status: Class 3 Packing group II
Subsidiary Risk Class 6.1
IMDG Status: Class 3 Packing group II
Subsidiary Risk Class 6.1

# 15. REGULATORY INFORMATION

WHMIS (Canada) Status: controlled WHMIS (Canada) Hazard Classification: B/2, D/1/B

SARA 311-312 Hazard Classification(s): immediate (acute) health hazard delayed (chronic) health hazard fire hazard

SARA 313: None, unless listed below

#### METHANOL

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below

TSCA (US Toxic Substances Control Act): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): This product is listed on the DSL or otherwise complies with CEPA new substance notification requirements.

EINECS (European Inventory of Existing Commercial Chemical Substances): This product is listed on EINECS.

EINECS Number: 200-659-6

AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.

MITI (Japanese Handbook of Existing and New-Chemical Substances): This product is listed in the Handbook or has been approved in Japan by new substance notification.

ECL (Korean Toxic Substances Control Act): This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.

16. OTHER INFORMATION

# For Additional Information:

Contact: MSDS Coordinator - Univar USA During business hours, Pacific Time - (425) 889-3400

#### NOTICE

Univar USA expressly disclaims all express or implied warranties of merchantibility and fitness for a particular purpose with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar USA Sales Office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar USA makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar USA's control. Therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein and does not relate to its use in combination with any other material or in any other process.

END OF MSDS



# HAZARDOUS MATERIALS INVENTORY FORM

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# MONOETHANOLAMINE

Norfox Code. 1810

FOR HELP CONTACT

CHEMTREC: 1-800-424-9300

International: 1-703-527-3887 Company: 1-323-583-0016

Norman, Fox & Co. 5611 S. Boyle Ave.

Vernon, CA 90058 USA

Revised Date:

September 27, 2002 Prepared by: Norman, Fox & Co

Date Printed: 10/22/2002 12:46 PM

## SECTION 1 - PRODUCT IDENTITY

MONOETHANOLAMINE

An alkanolamine MEA, 2-aminoethanol

INCI Name: Ethanolamine

CAS #141-43-5

# SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Monoethanolamine is Corrosive material which is also classified as hazardous due to the establishment of ACGIH Threshold Limit Values/Short Term Exposure Limits. MONOETHANOLAMINE does not contain any known carcinogens at 0.1% or above or carcinogens known to be hazardous at lower concentrations. Monoethanolamine is regulated under Canada's WHMIS at a threshold level of 1% as an ingredient in mixtures.

Exposure limits:

TLV 3 ppm (7.5mg/m<sup>3</sup>) STEL 6 ppm

 $(15 \text{ mg/m}^3)$ 

DOT Category: OSHA Category: CORROSIVE CORROSIVE.

AIR CONTAMINANT

RATINGS
3-High
2-Moderate
0-Least

# **SECTION 3 - HAZARDS IDENTIFICATION**

Harmful to fish and other water organisms. Keep out of waterways. May cause skin and severe eye irritation and is irritating to the mouth, throat and stomach. Vapors may cause respiratory tract irritation. Repeated exposure may cause kidney or liver damage and may aggravate existing dermatitis, asthma or pulmonary disease.

1 of 4 pic s

• 5611 5. Boyle Avenue • Vernon, CA • 90058-3930 USA • 123:837:7400 • Eax:323.837.7474 • WWW.morfdx.ws • info@norfo..v •

Norman, Fox & Co.





# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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008 08/18/06 PHOSPHORIC ACID

PRODUCT NAME:

PHOSPHORIC ACID

MSDS NUMBER:

MZP3973

DATE ISSUED:

2/15/2006

SUPERSEDES:

12/10/2004

ISSUED BY:

008614

PHOSPHORIC ACID

77

#### 1. PRODUCT IDENTIFICATION

SYNONYMS:

ORTHO-PHOSPHORIC ACID; WHITE PHOSPHORIC ACID

CAS NO:

7664-38-2

MOLECULAR WEIGHT: 98.00

CHEMICAL FORMULA: H3PO4 IN H2O

Distributed by: Univar USA Inc.

17425 NE Union Hill Road

Redmond, WA 98052

425-889-3400

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO	PERCENT	HAZARDOUS
PHOSPHORIC ACID WATER	7664-38-2	55 - 95%	YES
	7732-18-5	5 - 45%	NO

#### 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

DANGER! CORROSIVE. CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED.

# POTENTIAL HEALTH EFFECTS

## INHALATION .

INHALATION IS NOT AN EXPECTED HAZARD UNLESS MISTED OR HEATED TO HIGH TEMPERATURES. MIST OR VAPOR INHALATION CAN CAUSE IRRITATION TO THE NOSE, THROAT, AND UPPER RESPIRATORY TRACT. SEVERE EXPOSURES CAN LEAD TO A CHEMICAL PNEUMONITIS.

### INGESTION:

CORROSIVE. MAY CAUSE SORE THROAT, ABDOMINAL PAIN, NAUSEA, AND SEVERE BURNS OF THE MOUTH, THROAT, AND STOMACH. SEVERE EXPOSURES CAN LEAD TO SHOCK, CIRCULATORY COLLAPSE, AND DEATH.

#### SKIN CONTACT:

CORROSIVE. MAY CAUSE REDNESS, PAIN, AND SEVERE SKIN BURNS.

#### EYE CONTACT:

CORROSIVE. MAY CAUSE REDNESS, PAIN, BLURRED VISION, EYE BURNS, AND

PERMANENT EYE DAMAGE.

CHRONIC EXPOSURE: NO INFORMATION FOUND.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

PERSONS WITH PRE-EXISTING SKIN DISORDERS OR EYE PROBLEMS, OR IMPAIRED RESPIRATORY FUNCTION MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THE SUBSTANCE.

## 4. FIRST AID MEASURES

#### INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN IMMEDIATELY.

#### INGESTION:

IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

#### SKIN CONTACT:

IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN, IMMEDIATELY. WASH CLOTHING BEFORE REUSE.

#### EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH GENTLE BUT LARGE STREAM OF WATER FOR AT LEAST 15 MINUTES, LIFTING LOWER AND UPPER EYELIDS OCCASIONALLY. CALL A PHYSICIAN IMMEDIATELY.

#### 5. FIRE FIGHTING MEASURES

#### FIRE:

NOT CONSIDERED TO BE A FIRE HAZARD. CONTACT WITH MOST METALS CAUSES FORMATION OF FLAMMABLE AND EXPLOSIVE HYDROGEN GAS.

#### **EXPLOSION:**

NOT CONSIDERED TO BE AN EXPLOSION HAZARD.

## FIRE EXTINGUISHING MEDIA:

USE ANY MEANS SUITABLE FOR EXTINGUISHING SURROUNDING FIRE. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL. IF WATER IS USED, USE IN ABUNDANCE TO CONTROL HEAT AND ACID BUILD-UP.

#### SPECIAL INFORMATION:

IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

\_\_\_\_\_\_

# 6. ACCIDENTAL RELEASE MEASURES

VENTILATE AREA OF LEAK OR SPILL. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION 8. ISOLATE HAZARD AREA. KEEP UNNECESSARY AND UNPROTECTED PERSONNEL FROM ENTERING. CONTAIN AND RECOVER LIQUID WHEN POSSIBLE. NEUTRALIZE WITH ALKALINE MATERIAL (SODA ASH, LIME), THEN ABSORB WITH AN INERT MATERIAL (E. G., VERMICULITE, DRY SAND, EARTH), AND PLACE IN A CHEMICAL WASTE CONTAINER. DO NOT USE COMBUSTIBLE MATERIALS, SUCH AS SAW DUST. DO NOT FLUSH TO SEWER! US REGULATIONS (CERCLA) REQUIRE REPORTING SPILLS AND RELEASES TO SOIL, WATER AND AIR IN EXCESS OF REPORTABLE

QUANTITIES. THE TOLL FREE NUMBER FOR THE US COAST GUARD NATIONAL RESPONSE CENTER IS (800) 424-8802.

7. HANDLING AND STORAGE

KEEP IN A TIGHTLY CLOSED CONTAINER. PROTECT FROM PHYSICAL DAMAGE. STORE IN A COOL, DRY, VENTILATED AREA AWAY FROM SOURCES OF HEAT, MOISTURE, INCOMPATIBILITIES, AND DIRECT SUNLIGHT. CORROSIVE TO MILD STEEL. STORE IN RUBBER LINED OR 316 STAINLESS STEEL DESIGNED FOR PHOSPHORIC ACID. DO NOT WASH OUT CONTAINER AND USE IT FOR OTHER PURPOSES. WHEN DILUTING, THE ACID SHOULD ALWAYS BE ADDED SLOWLY TO WATER AND IN SMALL AMOUNTS. NEVER USE HOT WATER AND NEVER ADD WATER TO THE ACID. WATER ADDED TO ACID CAN CAUSE UNCONTROLLED BOILING AND SPLASHING. PROTECT FROM FREEZING. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (VAPORS, LIQUID); OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS: -OSHA PERMISSIBLE EXPOSURE LIMIT (PEL): 1 MG/M3 (TWA)

-ACGIH THRESHOLD LIMIT VALUE (TLV): 1 MG/M3 (TWA), 3 MG/M3 (STEL)

#### VENTILATION SYSTEM:

A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA. PLEASE REFER TO THE ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES", MOST RECENT EDITION, FOR DETAILS.

PERSONAL RESPIRATORS (NIOSH APPROVED):

IF THE EXPOSURE LIMIT IS EXCEEDED, A FULL FACEPIECE RESPIRATOR WITH HIGH EFFICIENCY DUST/MIST FILTER MAY BE WORN UP TO 50 TIMES THE EXPOSURE LIMIT OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. FOR EMERGENCIES OR INSTANCES WHERE THE EXPOSURE LEVELS ARE NOT KNOWN, USE A FULL-FACEPIECE POSITIVE-PRESSURE, AIR-SUPPLIED RESPIRATOR. WARNING: AIR PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

SKIN PROTECTION:

WEAR IMPERVIOUS PROTECTIVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR COVERALLS, AS APPROPRIATE, TO PREVENT SKIN CONTACT.

EYE PROTECTION:

USE CHEMICAL SAFETY GOGGLES AND/OR A FULL FACE SHIELD WHERE SPLASHING IS POSSIBLE. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA BELOW REFERS TO CONCENTRATED PHOSPHORIC ACID.

APPEARANCE:

BOILING POINT:

CLEAR, COLORLESS SYRUPY LIQUID.

158C (316F)

ODOR:

MELTING POINT:

SPECIFIC GRAVITY:

ODORLESS.

21C (70F)

SOLUBILITY:

1.69 @ 25C

MISCIBLE IN ALL PROPORTIONS IN

VAPOR PRESSURE (MM HG):

VAPOR DENSITY (AIR=1):

0.03 @ 20C (68F)

1.5 (0.1 N AQUEOUS SOLUTION)

EVAPORATION RATE (BUAC=1):

NO INFORMATION FOUND.

% VOLATILES BY VOLUME @ 21C (70F):

10. STABILITY AND REACTIVITY

STABILITY:

STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE. SUBSTANCE CAN SUPERCOOL WITHOUT CRYSTALLIZING.

HAZARDOUS DECOMPOSITION PRODUCTS:

PHOSPHORUS OXIDES MAY FORM WHEN HEATED TO DECOMPOSITION.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

#### INCOMPATIBILITIES:

LIBERATES EXPLOSIVE HYDROGEN GAS WHEN REACTING WITH CHLORIDES AND STAINLESS STEEL. CAN REACT VIOLENTLY WITH SODIUM TETRAHYDROBORATE. EXOTHERMIC REACTIONS WITH ALDEHYDES, AMINES, AMIDES, ALCOHOLS AND GLYCOLS, AZO-COMPOUNDS, CARBAMATES, ESTERS, CAUSTICS, PHENOLS AND CRESOLS, KETONES, ORGANOPHOSPHATES, EPOXIDES, EXPLOSIVES, COMBUSTIBLE MATERIALS, UNSATURATED HALIDES, AND ORGANIC PEROXIDES. PHOSPHORIC ACID FORMS FLAMMABLE GASES WITH SULFIDES, MERCAPTANS, CYANIDES AND ALDEHYDES. IT ALSO FORMS TOXIC FUMES WITH CYANIDES, SULFIDE, FLUORIDES, ORGANIC PEROXIDES, AND HALOGENATED ORGANICS. MIXTURES WITH NITROMETHANE ARE EXPLOSIVE.

CONDITIONS TO AVOID:

INCOMPATIBLES.

#### 11. TOXICOLOGICAL INFORMATION

ORAL RAT LD50: 1530 MG/KG; INVESTIGATED AS A MUTAGEN.

----/CANCER LISTS/--------NTP CARCINOGEN---INGREDIENT KNOWN ANTICIPATED IARC CATEGORY \_\_\_\_\_\_ PHOSPHORIC ACID (7664-38-2) NO NO NONE WATER (7732-18-5) NO NO NONE

12. ECOLOGICAL INFORMATION

#### ENVIRONMENTAL FATE:

WHEN RELEASED INTO THE SOIL, THIS MATERIAL MAY LEACH INTO GROUNDWATER. WHEN RELEASED TO WATER, ACIDITY MAY BE READILY REDUCED BY NATURAL WATER HARDNESS MINERALS. THE PHOSPHATE, HOWEVER, MAY PERSIST INDEFINITELY.

ENVIRONMENTAL TOXICITY:

NO INFORMATION FOUND.

#### 13. DISPOSAL CONSIDERATIONS

WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE HANDLED AS HAZARDOUS WASTE AND SENT TO A RCRA APPROVED INCINERATOR OR DISPOSED IN A RCRA APPROVED WASTE FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. STATE AND LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL DISPOSAL REGULATIONS.

DISPOSE OF CONTAINER AND UNUSED CONTENTS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.

#### 14. TRANSPORT INFORMATION

DOMESTIC (LAND, D.O.T.)

PROPER SHIPPING NAME: PHOSPHORIC ACID SOLUTION

HAZARD CLASS:

8

UN/NA:

UN1805

PACKING GROUP: III

INTERNATIONAL (WATER, I.M.O.) \_\_\_\_\_\_

PROPER SHIPPING NAME: PHOSPHORIC ACID SOLUTION

HAZARD CLASS:

8

UN/NA:

UN1805

PACKING GROUP: III

#### 15. REGULATORY INFORMATION

/CHEMICAL INVENTORY STATUS - PART INGREDIENT	1/	TSCA	EC	JAPAN	AUSTRALIA
PHOSPHORIC ACID (7664-38-2) WATER (7732-18-5)	<b></b>	YES YES	YES	YES YES	
/CHEMICAL INVENTORY STATUS - PART	2/				
INGREDIENT		KOREA		NADA NDSL	PHIL.
PHOSPHORIC ACID (7664-38-2) WATER (7732-18-5)		YES YES		NO NO	YES YES
/FEDERAL, STATE & INTERNATIONAL RE					
INGREDIENT	RO	TPQ	LIST	CHEM]	313 CAL CATG
	NO NO	NO	NO		NO NO
/FEDERAL, STATE & INTERNATIONAL R	EGULATI	ons -	PART 2	/	
INGREDIENT	CERCL			-TS	(D)
PHOSPHORIC ACID (7664-38-2) WATER (7732-18-5)	5000 NO		 NO NO	NO NO	)

CHEMICAL WEAPONS CONVENTION: NO TSCA 12(B): NO CDTA: NO CHRONIC: NO FIRE: NO SARA 311/312: ACUTE: YES PRESSURE: NO

(PURE / LIQUID) REACTIVITY: NO

AUSTRALIAN HAZCHEM CODE: 2R

POISON SCHEDULE: S5

WHMIS: THIS MSDS HAS BEEN PREPARED ACCORDING TO THE HAZARD CRITERIA OF THE CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS ALL OF THE INFORMATION REQUIRED BY THE CPR.

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0

CONTACT: MSDS COORDINATOR UNIVAR USA INC.

DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400

----- NOTICE -----

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\* \* \* END OF MSDS \* \* \*



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

EPART				_	77
☐ ADD ☐ DELETE ★ REVISED	1		P:	age IU of	10
FACILITY:10# 3 0 0 3 5	PUGINES NAME	Hy D.	1 7 6	age 14 of	12
CHEMICAL LOCATION	CILITY INFORMATIO	NO VETOC	ucts/\	lenus ab	s.IVC
12601 Monarch St	2 1 0				
CONFIDENTIAL LOCATION	zarden ("r	ove	-Cf	9284	1
	MICAL INFORMATION	6	GRID#		
CHEMICAL NAME	WASTE				
COMMON NAME OF TOURS 1 LIGHT		Yes 8	TRADE SECF	L) res	No 11
CAS# LOTASSILLE HYDroxic	te	9	An EHS Chem	Tes	No 12
MIX ture 10 FIRE CODE AZARD CLASSES (SL	pplied by GGFD)		*If EHS is "Yes	s", all amounts must be LE	BS 13
TYPE (Check one flom only)	STE 14 RADIOACTIVE	Yes N	No 15	Ol muse	13
PHYSICAL STATE a. SOLID b. LIQUID c. GAS	17 FED HAZARD CATEGORIES			CURIES	16
AVERAGE DAILY 19 MAXIMUM DAILY AMOUNT	- TILES	ACUTE HEALTH	•	C. PRESSURE RELE  CHRONIC HEALT	
UNITS A CHILDRE	20 ANNUAL WASTE AMO	DUNT WA		VASTE CODE	A 22
d. GALLONS b. CUBIC FEET 23 DAYS ON SITE c. POUNDS d. TONS If EHS, amount must be in pounds.	365	24 LARG	SEST CONTAINE		25
STORAGE CONTAINER	D: VAT		<i>5</i> 5		
C. TANK INSIDE BLDG G. METAL CONTAIN	RUM DI SIRER ROUS		CONTAINED	q. TANKWAGO	N 26
STORAGE PRESSURE	I. BOX(S)	D PLASTI	C CONTAINER CH OR EQUIP	S. TOTE BIN-	-
STORAGE TEMPERATURE		c. BELOW AMBIEN			27
%WT HAZARDOUS COMPONENT (For mix	CUTE OF WASTA ONLY	c. BELOW AMBIEN		d CRYOGENIC	28
1/10-5120 Potassium Hydroxi		T	HS	CAS #	#
193-30 Water	30	+=	☐ No 31	130-58	<u>-3</u> 32
3 29	30	44114	No 31	7732-18	-5 32
4 29	. 30	<del> </del>	No 31		32
5 29	30		No 31		32
if more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.	% by weight if carcinogenic, att	ech additional sheets	of paper capturin	of the required into-	32
UNDOT# 11411814 DCT	IG INFORMATION			and voquited information	
Refer to shipping papers or MSDS	_ 33	NFPA 7	04 HAZARD	DIAMOND	
DOT HAZARD CLASS CASS & CONTOSALO	1	FIRE (RE	D) 20	REACTIVE	
Refer to shipping papers or MSDS	_ 34	HEALTH (BLUE)	$3\times1$	> ← (YELLOW)	
EPCRA TYES NO	35	SPECIAL HAZARD	* *	WHITE OX/W 37	
x		<u></u>			
If EPCRA, Please Sign Here	MAK	E AS MANY (	COPIES OF	CHEMICAL	
Revised 2/02 haz-inven2.doc		NVENTORY F	UKIVI AS N	IEEDED	

007 08/18/06 CAUSTIC POTASH LIQUID (ALL GRADES)

PRODUCT NAME:

CAUSTIC POTASH LIQUID (ALL GRADES)

MSDS NUMBER:

OZ31866

DATE ISSUED:

06/30/2006

SUPERSEDES:

05/14/2004

ISSUED BY:

008730

# MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Distributed by: Univar USA Inc. 17425 NE Union Hill Road Redmond, WA 98052 425-889-3400

SUBSTANCE: CAUSTIC POTASH LIQUID (ALL GRADES)

## TRADE NAMES:

Caustic Potash Commercial Grade 10%, 25%, 30%, 35%, 40%, 45%, 48%, 50%; Caustic Potash Industrial Grade 45%, 50%; Caustic Potash Membrane Dilute Solution 45%, 48%, 50%; Caustic Potash Liquid (10-40% Solution)

#### SYNONYMS:

KOH, liquid potash

PRODUCT USE: glass manufacture, cleaner, process chemical, petroleum industry

2. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=1

HMIS RATINGS (SCALE 0-4): HEALTH=3 FLAMMABILITY=0 REACTIVITY=1

EMERGENCY OVERVIEW:

COLOR:

colorless

PHYSICAL FORM:

liquid

ODOR:

odorless

SIGNAL WORD:

DANGER

MAJOR HEALTH HAZARDS: CORROSIVE. CAUSES BURNS TO THE RESPIRATORY TRACT, SKIN, EYES AND GASTROINTESTINAL TRACT. CAUSES PERMANENT EYE DAMAGE.

PHYSICAL HAZARDS: Mixing with water, acid or incompatible materials may cause splattering and release of heat.

ECOLOGICAL HAZARDS: This material has exhibited moderate toxicity to aquatic organisms.

PRECAUTIONARY STATEMENTS: Do not get in eyes, on skin, or on clothing. Do not breathe vapor or mist. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation (possibly severe), burns, pulmonary edema LONG TERM EXPOSURE: to our knowledge, no effects are known

#### SKIN CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe), burns

LONG TERM EXPOSURE: dermatitis

#### EYE CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe), burns, eye damage,

blindness

LONG TERM EXPOSURE: visual disturbances

#### INGESTION:

SHORT TERM EXPOSURE: irritation (possibly severe), burns, nausea, vomiting LONG TERM EXPOSURE: to our knowledge, no effects are known

#### CARCINOGEN STATUS:

OSHA: No NTP: No IARC: No

# 3. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: WATER CAS NUMBER: 7732-18-5 PERCENTAGE: 49-90

COMPONENT:

POTASSIUM HYDROXIDE

CAS NUMBER: 1310-58-3 PERCENTAGE: 10-51

## 4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

NOTE TO PHYSICIAN: The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage. Probable mucosal damage may contraindicate the use of gastric lavage.

#### 5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding

fire.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water. Wear NIOSH approved positive-pressure self-contained breathing apparatus. Avoid contact with skin.

SENSITIVITY TO MECHANICAL IMPACT: Not sensitive

SENSITIVITY TO STATIC DISCHARGE: Not sensitive

FLASH POINT: Not flammable

## 6. ACCIDENTAL RELEASE MEASURES

#### OCCUPATIONAL RELEASE:

Wear appropriate personal protective equipment recommended in Section 8 of the MSDS. Completely contain spilled material with dikes, sandbags, etc. Keep out of water supplies and sewers. Liquid material may be removed with a vacuum truck. Flush spill area with water, if appropriate. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

## 7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances (see Section 10 of the MSDS).

HANDLING: Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. When mixing, slowly add to water to minimize heat generation and spattering.

# 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

#### EXPOSURE LIMITS:

CAUSTIC POTASH LIQUID (ALL GRADES):

POTASSIUM HYDROXIDE:

2 mg/m3 ACGIH ceiling

VENTILATION: Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear chemical safety goggles with a faceshield to protect against skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Always place pants legs over boots. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

GLOVES: Wear\_appropriate chemical\_resistant\_gloves.

PROTECTIVE MATERIAL TYPES: butyl rubber, natural rubber, nitrile, polyvinyl chloride (PVC), Tychem

RESPIRATOR: Where dust or vapor concentration exceeds or is likely to exceed applicable exposure limits, a NIOSH approved respirator is required. If eye irritation occurs, a full face style mask should be used. Air-purifying respirators should be equipped with a minimum N-95 dust/mist

filter (1/2 facepiece) and N-100 dust/mist filter (full facepiece). When an air-purifying respirator is not adequate or during spills and/or emergencies of unknown concentrations, a NIOSH approved self-contained breathing apparatus or airline respirator with full-face piece is required. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid APPEARANCE: clear COLOR: colorless

ODOR: colorless

BOILING POINT: 216-289 F (102-143 C)
FREEZING POINT: -128 to 39 F (-89 to 4 C)
VAPOR PRESSURE: Not available

VAPOR PRESSURE:

VAPOR DENSITY:

SPECIFIC GRAVITY (water=1):

Not available

1.09-1.52 @ 15

SPECIFIC GRAVITY (water=1): 1.09-1.52 @ 15.6 C
DENSITY: 9.09-12.67 lbs/gal @ 15.6 C

WATER SOLUBILITY: 100%
PH: 12-14

VOLATILITY: Not available
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not available

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

# 10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Mixing with water, acid or incompatible materials may cause splattering and release of large amounts of heat. Will react with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars or food and beverage products in enclosed spaces.

INCOMPATIBILITIES: acids, halogenated compounds, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: None known.

POLYMERIZATION: Will not polymerize.

# 11. TOXICOLOGICAL INFORMATION

CAUSTIC POTASH LIQUID (ALL GRADES):

TOXICITY DATA: When in solution, this material will affect all tissues with which it comes in contact. The severity of the tissue damage is a function of concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucous membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Inhalation will cause severe irritation, possible burns with pulmonary edema, which may lead to pneumonitis. Skin contact with this material may cause severe irritation and corrosion of tissue. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. Ingestion may cause irritation, corrosion/ulceration, nausea, and vomiting. In general, chronic effects are due to long-term irritation. This material may cause dermatitis on the skin, or recurrent corneal ulceration and visual disturbances. In rare cases reports have noted long-term inhalation causes bronchial inflammatory reaction or obstructive airway dysfunction.

#### LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

TARGET ORGANS: eyes, skin, respiratory system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory system (including asthma and other breathing disorders)

# 12. ECOLOGICAL INFORMATION

# ECOTOXICITY DATA:

FISH TOXICITY: This material has exhibited moderate toxicity to aquatic organisms. For potassium hydroxide: 80 mg/L 96 hours LC50 Mosquito fish; 165 mg/L 24 hours LC50 Guppy

# FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

PERSISTENCE: This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material is believed to exist in the disassociated state in the environment.

BIOCONCENTRATION: This material is believed not to bioaccumulate.

OTHER ECOLOGICAL INFORMATION: This material has exhibited slight toxicity to terrestrial organisms.

# 13. DISPOSAL CONSIDERATIONS

Reuse or reprocess if possible. Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002.

# 14. TRANSPORT INFORMATION

# U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Potassium hydroxide, solution

ID NUMBER: UN1814

HAZARD CLASS OR DIVISION: 8

PACKING GROUP: II LABELING REQUIREMENTS: 8

DOT HAZARDOUS SUBSTANCE(S):

Potassium hydroxide 1000 lb(s) (454 kg(s))

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: SHIPPING NAME: Potassium hydroxide, solution

UN NUMBER: UN1814

CLASS: 8

PACKING GROUP/RISK GROUP: II

# 15. REGULATORY INFORMATION

# U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

POTASSIUM HYDROXIDE: 1000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

Yes No

CHRONIC: FIRE:

No

REACTIVE:

No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

FDA: This material has Generally Recognized as Safe (GRAS) status under specific FDA regulations. Additional information is available from the Code of Federal Regulations (CFR) which is accessible on the FDA's website.

# STATE REGULATIONS:

California Proposition 65: This product is not listed, but it may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact Customer Service.

NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW: REPORTING REQUIREMENT: WATER 7732-18-5 49-90% - POTASSIUM HYDROXIDE 1310-58-3 10-51%

RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST: POTASSIUM HYDROXIDE 1310-58-3 10-51%

SPECIAL HEALTH HAZARD SUBSTANCE LIST: POTASSIUM HYDROXIDE 1310-58-3 10-51%

PENNSYLVANIA RIGHT TO KNOW: REPORTING REQUIREMENT: WATER 7732-18-5 49-90% POTASSIUM HYDROXIDE 1310-58-3 10-51%

HAZARDOUS SUBSTANCE LIST: POTASSIUM HYDROXIDE 1310-58-3 10-51%

ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST: POTASSIUM HYDROXIDE 1310-58-3 10-51%

SPECIAL HAZARDOUS SUBSTANCE LIST: Not regulated.

# CANADIAN REGULATIONS:

CONTROLLED PRODUCTS REGULATIONS (CPR): This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASSIFICATION: E.

# NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): All the components of this substance are listed on or are exempt from the inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): All components of this product are listed on the

CONTACT: MSDS COORDI	FOR ADDITIONAL I	NFORMATION - R USA INC.	
DURING BU	JSINESS HOURS, PACIFIC	TTME /	425) 889-3400

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\* \* \* END OF MSDS \* \* \*

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\* \* \* END OF MSDS \* \* \*



# HAZARDOUS MATERIALS INVENTORY FORM

FORM 3

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EPCRA			•	ICAL INFO	DRMATION			n in j	Fi di		
CHEMICAL NAME	Pro Pan	0 (91	5			Yes 8			☐ Yes	No No	11
COMMON NAME	ro Pana		1	·	1	9	An EHS Ch		Yes	Mo No	12
CAS# 74 98	10	FIRE CODE HAZ	ARD CLASSES (supp	olied by GGFD)			"If EHS is "	Yes", all am	ounts must be L	.BS	13
TYPE (Check one item only)	a. PURE	b. MIXTURE	a. WAST	E 14	RADIOACTIVE	Yes	No 15	5 CURIE	s 0	7	16
PHYSICAL STATE (Check one item only)	a. SOLID	b. LIQUID	c. GAS 1	7 FED HAZ CATEGO	ARD a. F	RE 🗆 b	REACTIVE	□ c F	RESSURE REI	LEASE	18
AVERAGE DAILY	19 MAX	XIMUM DAILY	7	20 ANNU	UNITED THE STATE OF THE STATE O	CUTE HEALTH			CHRONIC HEAL	TH .	
AMOUNT 36	70 AM	OUNT	300	20 ANNO	AL WASTE AMOUN			TE WASTE	CODE		22
C. POUNDS	S	FEET 23	DAYS ON SITE	36	5	24 LA	RGEST CONT	AINER .	00		25
STORAGE CONTAINER (Check all that apply)	a. ABOVEGROU		e. PLASTIC DRUM f. NONMETALLIC D		i. VAT I. FIBER DRUM	m cyt	INDER		q. TANK WA	GON	26
	a. TANK INSIDE		g. METAL CONTAIN h. CARBOY	NER 🔲	I. BAG(S) I. BOX(S)	O PLA	STIC CONTAIN	NER [	s. TOTE BIN		
STORAGE PRESSURE	Ø a. AN	ABIENT	☐ b. ABC	OVE AMBIENT	□ c	BELOW AME	HENT				27
STORAGE TEMPERATURE	之 a. AN			OVE AMBIENT		BELOW AME	BIENT	d. CF	RYOGENIC		28
%WT	HAZARDO	OUS COMPO	ONENT (For mix	dure or was	te only)	59674	EHS		CA	.S #	
1875-100	ProPa	ne			30	☐ Yes	⊠ No	31	74-98	3-6	32
20-50	Ethar	re			30	☐ Yes	Ø No	31	24-8	4-0	32
3 0-50	Propyle	one	DAILS -		30	☐ Yes	No No	31	15-07	-1	32
10-25	Butan	05			30	☐ Yes	Ø No	31		`	32
5 50PPM	Ethyl	Merca	pton		30	☐ Yes	Ø No	31			32
If more hazardous component	s are present of greater th	ian 1% by weight i	non-carcinogenic, or PLACARD			ch additional s	heets of paper	capturing th	e required infor	mation.	
	1 1 1 1 -		TEAGAILE	ino ini o	MINATION					Series I	
UNDOT#	UN IO	15		33	1		PA 704 HA E (RED) 🐿	ZARD DI	AMOND		
	Refer to shipp	ing papers o	or MSDS	11	,	HEALTI-	\ \(\lambda\)	4	REACTIV		ĺ
DOT HAZARD CLAS		shipping pa	pers or MSDS	blec	Eas	(BLUE)	ECIAL	×9/,	, <b>←</b> (YELLO) VHITE	/ <b>v)</b>	
EPCRA □ YES	<b>Ж</b> ио	,		35	·L		ZARD 🖈		X/W	27	
x	•				MA	KE AS MA	NY COPI	ES OF	CHEMICA	L	
	If EPCRA, PI	ease Sign I	Here	36			RY FOR			- 4-1-	

# **UNITED PACIFIC ENERGY**

# **MATERIAL SAFETY DATA SHEET**

Commercial Grade Propane (Odorized)

# 医多尺耳形形的 "自一切一"(5月5年)《五次》),于此人心。

PERS, INC. Accidents Spills or Leaks Only 1-800-633-8253

是一种。例如这次数据数别。

UNITED PACIFIC ENERGY 2995 Skyline Blvd. #207 Reno, Nevada 89509-5163 1-800-726-5747

1-775-689-2820

Fax: 1-888-689-3155

# SECTION I-IDENTIFICATION

PRODUCT:

**Commercial Propane** 

CHEMICAL FAMILY:

Paraffinic Hydrocarbon

SYNONYM:

Liquefied Petroleum Gas; LP-gas; LPG

**CHEMICAL FORMULA: C3H8** 

# SECTION II - INGREDIENTS

MATERIAL	CAS NUMBER	
ETHANE		PERCENT
PROPANE	74-84-0	0-5.0
PROPYLENE	74-98-6	87.5-100
	115-07-1	0-5.0
BUTANES	Various	0-2.5
ETHYL MERCAPTAN	75-08-01	0-50 ppm
		חמם טכ-ט

# SECTION III - PHYSICAL DATA

**BOILING POINT:** 

**VAPOR PRESSURE:** 

208 psig @ 100 degrees F.

SPECIFIC GRAVITY:

.508 (H20=1)

VAPOR DENSITY:

1-55 (Air=1)

SOLUBILITY IN WATER

Slight, 0.1 to 1.0%

APPEARANCE AND ODOR

Colorless, odorless, in natural form

mercaptan odorant added\*

# **\*ODORANT WARNING**

Odorant is added to aid in detection of leaks. One common odorant is ethyl mercaptan, CAS No. 75-08-1. Odorant has a foul, skunk like odor. The odorant is effective in most instances, but not everyone can smell the odor. The ability of people to detect odors varies widely. Also, certain chemical reactions with material in the propane system can reduce the propane odor level. No odorant will be 100% effective in all circumstance. If odor level appears to be weak, notify propane supplier immediately,

# SECTION IV - REACTIVITY

STABILITY:

6

Stable

HAZARDOUS POLYMERIZATION:

Not expected to occur

CONDITIONS @ MATERIALS TO AVOID:

Keep away from high heat, sparks, open flame,

strong oxidizing agents.

HAZARDOUS DECOMPOSITION:

Combustion may produce carbon monoxide and

other harmful substances.

# SECTION V- FIRE AND EXPLOSION DATA

FLASH POINT:

-156 F. (estimated)

**AUTO IGNITION TEMPERATURE:** 

842 F.

FLAMMABILITY LIMITS:

LOWER 2.1% UPPER 9.5%

**EXTINGUISHING Media:** 

Dry chemical, water spray, foam, C02

# **FIRE FIGHTING PROCEDURES:**

Evacuate area. Shut off source of gas, if possible, Notify Fire Department. Remain up-wind of vapors. Allow only trained, properly protected personnel in area. Shut off source of gas, if possible. Allow fire to burn itself out after gas flow is shut off. If gas flow cannot be shut off, do not extinguish fire. Allow fire to burn itself out using high volume water supply to cool heat-exposed pressure containers and nearby equipment. Approach a flame enveloped container from the side, never the head ends. Use extreme caution when applying water to a container which has been exposed to heat or flame for more than a short time. For uncontrollable fires and when flame is implinging on container, withdraw all personnel and evacuate vicinity immediately.

# **USUAL FIRE & EXPLOSION HAZARDS:**

Firefighters should wear self-contained breathing apparatus in the positive pressure mode with full facepiece. when there is a possibility of exposure to smoke, furnes or hazardous decomposition products. Uncontrolled vapors spread rapidly, are heavier than air and are extremely flammable.

# SECTION VIDOCCUPATIONAL EXPOSURE LIMITS

ACGIH (American conference of Governmental Industrial Hygienists) List as a simple Asphyxiate. OSHA (Occupational Safety and Health Administration) TWA 1000 PPM.

# SECTION VII - HEALTH INFORMATION

INHALATION:

Exposure may produce rapid breathing, headache, dizziness, disturbance, muscular weakness, tremors, narcosis, unconsciousness, and death, depending on duration and concentration of exposure.

EYE CONTACT:

This gas is non-irritating, but direct contact with liquefied, pressurized gas or frost particles may produce severe and possible permanent eye damage from freeze burns.

SKIN CONTACT: This material is not expected to be absorbed through the skin. Non-irritating; but solid and liquid forms of this material and pressurized gas can cause freeze burns.

INGESTION:

Solid and liquid forms of this material and the pressurized gas can cause freeze bums.

SPECIAL EFFECTS: Personnel with pre-existing chronic respiratory diseases should avoid exposure to this material.

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SECTION VIII - EMERGENCY AND FIRST AID PROCEDURES	
INHALATION: Immediately move personnel to fresh air. For respiratory distress, g or administer CPR (cardiopulmonary resuscitation), if necessary. Ol attention if breathing difficulties continue.	ive air, oxygen, otain medical
EYE CONTACT: Vapors are not expected to present an eye irritation hazard. If contasolid, immediately flush the eye(s) gently with warm water for at leas Seek medical attention if pain or redness persists.	cted by liquid/ t 15 minutes.
INGESTION: Induce vomiting with warm water (qt.) only if patient is conscious. In obtain medical attention.	nmediately
SECTION IX - EMPLOYEE PROTECTION	d Colombigue (Accordinate Arca Colombigue)
RESPIRATORY: For excessive gas concentrations, use only NIOSH/MSHA self-contain apparatus.	ned breathing
EYE:  Use chemical-type goggles and face shield when handling liquefied goggles and or a face shield are recommended when handling high prant and piping system and whenever vapors are discharged.	asses. Safety essure cylinders
SKIN: Prevent potential skin contact with cold liquid/solid/vapors. Use insula plastic or neoprene coated canvas gloves and protective gear (apron, to protect hands and other skin areas.	ited, impervious face shield, etc.)
SECTION X - ENVIRONMENTAL PROTECTION	the state of the s
EFFECT: Avoid uncontrolled releases of this material. Liquid releases will have on plant and animal life. Large liquid release will quickly vaporize to prove vapor cloud. Vapor cloud is both a fire and asphyxiation hazard.	possible effect roduce a large
SPILL OR LEAK Product is extremely flammable. Vapor is heavier than air and may co levels. If there is a leak but no fire, do not ignite the escaped gas. Elin ignition sources. Water spray can be used to help dilute vapor concent air. If possible, remove leaking container to safe area.	
Disposal of gas in accordance with applicable laws and regulations. Ve safe location and insure that gas dissipates below the lower flammable burning is preferred.	nt vapor in limit. Controlled
SECTION XI - SPECIAL PROTECTION	
SECTION XI - SPECIAL PROTECTION	

Store and use cylinders and tanks in a well ventilated area, away from heat and sources of ignition. No smoking near storage or use. Follow standard procedures for handling cylinders, tanks, loading/unloading. Fixed storage containers must be grounded and bonded during transfer of product.

## SECTION XII - REGULATORY INFORMATION

DOT. Hazard Class: 2.1 (FLAMMABLE GAS)

DOT ID No. (UN/NA) **UN 1075** 

DOT Shipping Name: LIQUEFIED PETROLEUM GAS (ODORIZED) IMO Shipping Name:

Propane / Butane

IMO Hazard Class:

IMO Label: Flammable Gas

SARA TITLE III INFORMATION: This product may contain over 1.0% propylene. This is subject to the reporting Section 313.

HAZARD CATEGORY FOR SECTION 311/312 REPORTING: Immediate (acute) health hazard. Fire hazard. Sudden release of pressure hazard.

TSCA STATUS: All components of this product are listed on the TSCA inventory.

The above information is based on the data of which we are aware and is believed to be correct as of the the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the data hereof may suggest notification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shell make his own determination of the suitability of the material for his particular purpose.