

PART # 33 - CG1305GL

PO # 1795034

# Material Safety Data Sheet

**HUNTSMAN**  
Enriching lives through innovation

CG 1305 HO US

## 1. Product and company identification

**CG 1305 HO US**  
Material uses : Adhesive Hardener  
MSDS # : 00058986  
Validation date : 10/1/2011.  
Print date : 10/1/2011.

Supplier/Manufacturer : Huntsman Advanced Materials Americas LLC  
P.O. Box 4980  
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

E-Mail: MSDS@huntsman.com

**In case of emergency** : Chemtrec: (800) 424-9300 or (703) 527-3887

## 2. Hazards identification

Physical state : Liquid.  
Odor : Amine-like.  
Color : Amber.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : DANGER!  
MAY BE FATAL IF INHALED. CAUSES EYE AND SKIN BURNS. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

See toxicological information (Section 11)

GENERAL INFORMATION : Read the entire MSDS for a more thorough evaluation of the hazards.

## 3. Composition/information on ingredients

Name	CAS number	%
Fatty Acids, Tall-oil, Reaction Products with Polyethylenepolyamines	68910-93-0	30 - 60
triethylenetetramine	112-24-3	13 - 30
tetraethylenepentamine	112-57-2	3 - 7
diethylenetriamine	111-40-0	1 - 3

## 4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Call medical doctor or poison control center immediately. Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Notes to physician** : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

## 5 . Fire-fighting measures

- Flash point** : Closed cup: >118°C (>244.4°F) [PMCC]
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## 8. Exposure controls/personal protection

Ingredient	Exposure limits
diethylenetriamine	<b>ACGIH TLV (United States, 2/2010). Absorbed through skin.</b> TWA: 1 ppm 8 hour(s). TWA: 4.2 mg/m <sup>3</sup> 8 hour(s).

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9 . Physical and chemical properties

### General information

#### Appearance

Physical state : Liquid.  
 Color : Amber.  
 Odor : Amine-like.

### Important health, safety and environmental information

pH : Not available.  
 Boiling/condensation point : >200°C (>392°F)  
 Melting/freezing point : Not available.  
 Flash point : Closed cup: >118°C (>244.4°F) [PMCC]  
 Flammable limits : Not available.  
 Auto-ignition temperature : Not available.  
 Decomposition temperature : >200°C (>392°F)  
 Vapor pressure : <0.1 kPa (<0.75 mm Hg) [20°C]  
 Specific gravity : 0.95 to 1  
 Water solubility :  
 Partition coefficient: n-octanol/water (log Kow) : Not available.  
 Viscosity : Dynamic: 400 mPa·s (400 cP)  
 Density : Not available.  
 Vapor density : Not available.  
 Evaporation rate (butyl acetate = 1) : Not available.  
 VOC : Not applicable

## 10 . Stability and reactivity

Chemical stability : The product is stable.  
 Under normal conditions of storage and use, hazardous reactions will not occur.  
 Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.  
 Conditions to avoid : No specific data.  
 Materials to avoid : strong acids, strong bases, strong oxidising agents  
 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 . Toxicological information

### Potential acute health effects

Inhalation : Very toxic by inhalation. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.  
 Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.  
 Skin : Corrosive to the skin. Causes burns. Harmful in contact with skin. May cause sensitization by skin contact.  
 Eyes : Corrosive to eyes. Causes burns.

### Acute toxicity



**11 . Toxicological information**

Product/ingredient name	Result	Species	Dose	Exposure
triethylenetetramine	LD50 Dermal	Rabbit - Male, Female	1465 mg/kg	-
	LD50 Oral	Rat - Male, Female	1716 mg/kg	-
diethylenetriamine	LD50 Dermal	Rabbit	1090 mg/kg	-
	LD50 Oral	Rat	1500 to 2000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.07 to 0.3 mg/L	4 hours

**Chronic toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
triethylenetetramine	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg/d	26 weeks
diethylenetriamine	Sub-chronic NOEL : Oral	Rat - Male, Female	70 to 80 mg/kg/d	13 weeks; 7 days per week
	Chronic NOAEL Dermal	Rat - Male, Female	114 mg/kg/d	400 days
	Sub-acute NOEC Inhalation Vapor	Rat - Male, Female	550 mg/m3	15 days

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
triethylenetetramine	Skin - Corrosive	Rabbit	-	-	-

**Skin** : triethylenetetramine: Corrosive to the skin.

**Sensitizer**

Product/ingredient name	Route of exposure	Species	Result
triethylenetetramine	skin	Guinea pig	Sensitizing
diethylenetriamine	skin	Guinea pig	Sensitizing

**Carcinogenicity**

Product/ingredient name	Result	Species	Dose	Exposure
diethylenetriamine	Negative - Dermal - NOEL :	Mouse - Male	56.3 mg/kg	3 days per week

**Mutagenicity**

Product/ingredient name	Test	Experiment	Result
triethylenetetramine	-	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Positive
	-	Experiment: In vivo Subject: Mammalian- Animal Cell: Somatic	Negative
diethylenetriamine	-	Experiment: In vitro Subject: Mammalian- Animal Metabolic activation: +/-	Negative
	-	Experiment: In vitro Subject: bacteria/yeast Metabolic activation: +/-	Negative
	-	Experiment: In vivo Subject: Insect Cell: Germ	Negative
	-	Experiment: In vivo	Negative

**11 . Toxicological information**

Subject: Mammalian-  
Animal  
Cell: Somatic

**Potential chronic health effects**

- Chronic effects** : Contains material that may cause target organ damage, based on animal data. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Target organs** : Contains material which may cause damage to the following organs: kidneys, lungs, liver.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.

**Medical conditions aggravated by over-exposure**

Pre-existing skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

**12 . Ecological information**

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

**Aquatic ecotoxicity**

Product/ingredient name	Test	Result	Species	Exposure
triethylenetetramine	-	Acute EC50 800 mg/L Fresh water	Bacteria	30 minutes Static
	-	Acute EC50 31.1 mg/L Fresh water	Daphnia	48 hours Static
	OECD 201 Alga, Growth Inhibition Test	Acute ErC50 (growth rate) 20 mg/L Fresh water	Algae	72 hours Semi-static
	-	Acute LC50 330 mg/L Fresh water	Fish	96 hours Static
	OECD OECD 202: Part II (Daphnia sp., Reproduction Test)	Chronic EC50 10 mg/L Fresh water	Daphnia	21 days Semi-static
diethylenetriamine	-	Acute EC50 17 mg/L	Daphnia	48 hours
	-	Acute LC50 332 mg/L	Fish	96 hours
	-	Chronic NOEC 5.6 mg/L Fresh water	Daphnia	21 days Semi-static

**Biodegradability**

Product/ingredient name	Test	Result	Dose	Inoculum
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**12 . Ecological information**

triethylenetetramine	OECD 302A Inherent Biodegradability: Modified SCAS Test	20 % - 84 days	DOC	Activated sludge
	OECD 301D Ready Biodegradability - Closed Bottle Test	0 % - Not readily - 28 days	Oxygen consumption	Activated sludge
diethylenetriamine	-	<60 % - Not readily - 28 days	-	-

**Other ecological information**

Biological Oxygen Demand : Not Determined  
(BOD 5 DAY)

Chemical Oxygen Demand : Not Determined  
(COD)

<u>Product/ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
triethylenetetramine	-	-	Not readily
diethylenetriamine	-	-	Not readily

<u>Product/ingredient name</u>	<u>LogP<sub>ow</sub></u>	<u>BCF</u>	<u>Potential</u>
triethylenetetramine	-1.4 to 2.9	99	low
diethylenetriamine	-1.3	-	low

Other adverse effects : No known significant effects or critical hazards.

PBT : Not applicable.

**Other information****13 . Disposal considerations**





**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

**14 . Transport information****Proper shipping name**

DOT : Polyamines, liquid, corrosive, n.o.s. (TRIETHYLENETETRAMINE) (TETRAETHYLENE PENTAMINE)  
 TDG : Polyamines, liquid, corrosive, n.o.s. (TRIETHYLENETETRAMINE) (TETRAETHYLENE PENTAMINE)  
 IMDG : Polyamines, liquid, corrosive, n.o.s.(TRIETHYLENE TETRAMINE) (TETRAETHYLENE PENTAMINE)  
 IATA : Polyamines, liquid, corrosive, n.o.s. (TRIETHYLENE TETRAMINE) (TETRAETHYLENE PENTAMINE)

**14 . Transport information**

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	UN2735	8	III		-
TDG Classification	UN2735	8	III		-
IMDG Class	UN2735	8	III		<b>Emergency schedules (EmS)</b> F-A, S-B
ATA-DGR Class	UN2735	8	III		<b>Passenger and Cargo Aircraft</b> Quantity limitation: 1 L Packaging instructions: 851 <b>Cargo Aircraft Only</b> Quantity limitation: 30 L Packaging instructions: 855

PG\* : Packing group

**15 . Regulatory information**U.S. Federal regulations

- HCS Classification : Highly toxic material  
Corrosive material  
Sensitizing material  
Target organ effects
- U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
- TSCA 5(a)2 final significant new use rule (SNUR) : None.
- TSCA 5(e) substance consent order : None.
- TSCA 12(b) one-time export notification: : None.
- TSCA 12(b) annual export notification : None.
- SARA 302/304/311/312 extremely hazardous substances : **SARA 302/304/311/312 extremely hazardous substances:** No Ingredient Listed
- SARA 311/312 hazard identification : **SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** Immediate (acute) health hazard, Delayed (chronic) health hazard
- Clean Air Act Section 111 - Volatile Organic Compounds (VOC) : Not available.

**15 . Regulatory information**

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	No Ingredients Listed.		
Clean Air Act - Ozone Depleting Substances (ODS)	: This product does not contain nor is it manufactured with ozone depleting substances.		
SARA 313	No ingredients listed.		

**CERCLA: Hazardous substances:** No ingredients listed.

**STATE REGULATIONS:**

**PENNSYLVANIA - RTK:** The following components are listed: 1,2-ETHANEDIAMINE, N,N'-BIS(2-AMINOETHYL)-; 1,2-ETHANEDIAMINE, N-(2-AMINOETHYL)-N'-[2-[(2-AMINOETHYL)AMINO]ETHYL]-; 1,2-ETHANEDIAMINE, N-(2-AMINOETHYL)-

**California Prop 65 :** This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**Canada**

**WHMIS (Canada)** : Class D-1A: Material causing immediate and serious toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).  
Class E: Corrosive material

**CEPA DSL** : All components are listed or exempted.

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

**International lists** : **Australia inventory (AICS):** All components are listed or exempted.  
**China inventory (IECSC):** All components are listed or exempted.  
**Japan inventory:** At least one component is not listed.  
**Korea inventory:** All components are listed or exempted.  
**New Zealand Inventory of Chemicals (NZIoC):** Not determined.  
**Philippines inventory (PICCS):** At least one component is not listed.

**16 . Other information**

**Label requirements** : MAY BE FATAL IF INHALED. CAUSES EYE AND SKIN BURNS. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

**Hazardous Material Information System (U.S.A.)** :

Health	*	3
Flammability		1
Physical hazards		0
Personal protection		



## 16 . Other information

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



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Version : 3

☑ Indicates information that has changed from previously issued version.

### Notice to reader

*While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.*

**IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.**

**THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.**

*Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.*

**NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.**

# Material Safety Data Sheet

**HUNTSMAN**  
Enriching lives through innovation

## CG 1305 RO US

### 1. Product and company identification

**CG 1305 RO US**  
Material uses : Epoxy adhesive  
MSDS # : 00058904  
Validation date : 7/23/2011.  
Print date : 7/23/2011.

Supplier/Manufacturer : Huntsman Advanced Materials Americas LLC  
P.O. Box 4980  
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

E-Mail: MSDS@huntsman.com

**In case of emergency** : Chemtrec: (800) 424-9300 or (703) 527-3887

### 2. Hazards identification

Physical state : Liquid.  
Odor : Slight  
Color : White.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!  
CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.  
Do not breathe vapor or mist. Do not get on skin or clothing. Avoid contact with eyes.  
Wash thoroughly after handling.

See toxicological information (Section 11)

GENERAL INFORMATION : Read the entire MSDS for a more thorough evaluation of the hazards.

### 3. Composition/information on ingredients

Name	CAS number	%
Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	25068-38-6	30 - 60
glass,-oxide,-chemicals-	65997-17-3	13 - 30
Alumina	21645-51-2	13 - 30
glycidylether of C12-C14 alcohols	68609-97-2	7 - 13
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	3101-60-8	3 - 7

## 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Notes to physician** : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

## 5. Fire-fighting measures

- Flash point** : Closed cup: >150°C (>302°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
halogenated compounds  
metal oxide/oxides

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## 8. Exposure controls/personal protection

Ingredient	Exposure limits
glass,-oxide,-chemicals-	<b>ACGIH TLV (United States, 2/2010).</b> TWA: 1 f/cc 8 hour(s). Form: Continuous filament glass fibers TWA: 5 mg/m <sup>3</sup> 8 hour(s). Form: Inhalable fraction

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal protection

- Respiratory** : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**8 . Exposure controls/personal protection****9 . Physical and chemical properties**General informationAppearance

Physical state : Liquid.  
 Color : White.  
 Odor : Slight

Important health, safety and environmental information

pH : Not available.  
 Boiling/condensation point : >200°C (>392°F)  
 Melting/freezing point : Not available.  
 Flash point : Closed cup: >150°C (>302°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]  
 Flammable limits : Not available.  
 Auto-ignition temperature : Not available.  
 Decomposition temperature : >200°C (>392°F)  
 Vapor pressure : Not available.  
 Specific gravity : 0.78 to 0.85  
 Water solubility : practically insoluble  
 Partition coefficient: n-octanol/water (log Kow) : Not available.  
 Density : 0.83 g/cm<sup>3</sup> [20°C (68°F)]  
 Vapor density : Not available.  
 Evaporation rate (butyl acetate = 1) : Not available.  
 VOC : Not available.

**10 . Stability and reactivity**

Chemical stability : The product is stable.  
 Under normal conditions of storage and use, hazardous reactions will not occur.  
 Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.  
 Conditions to avoid : No specific data.  
 Materials to avoid : strong acids, strong bases, strong oxidising agents  
 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**11 . Toxicological information**Potential acute health effects

Inhalation : No known significant effects or critical hazards.  
 Ingestion : No known significant effects or critical hazards.  
 Skin : Irritating to skin. May cause sensitization by skin contact.  
 Eyes : Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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**11 . Toxicological information**

glycidylether of C12-C14 alcohols	LD50 Oral	Rat - Male	30.1 ml/kg	-
	LC50 Inhalation Vapor	Rat	>0.15 mg/L	7 hours
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2000 mg/kg	-
	LC0 Inhalation Vapor	Rat - Male	0.00001 ppm	5 hours
Alumina	LDLo Intraperitoneal	Rat	150 mg/kg	-

**Chronic toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
glycidylether of C12-C14 alcohols	Sub-chronic NOEL : Dermal	Rat - Male, Female	1 mg/kg/d	13 weeks; 5 days per week
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg	14 weeks; 7 days per week
	Sub-chronic NOEL : Dermal	Rat - Male, Female	10 mg/kg	13 weeks; 5 days per week
	Sub-chronic NOAEL Dermal	Mouse - Male	100 mg/kg	13 weeks; 3 days per week

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Mild irritant	Rabbit	-	-	-

**Sensitizer**

Product/ingredient name	Route of exposure	Species	Result	Dose	Exposure
glycidylether of C12-C14 alcohols	skin	Guinea pig	Sensitizing		
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	skin	Mouse	Sensitizing		
glass,-oxide,-chemicals-	skin	Guinea pig	Sensitizing		
Product/ingredient name	Result	Species	Dose	Exposure	
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	Negative - Oral - NOAEL	Rat - Male, Female	15 mg/kg	2 years; 7 days per week	
	Negative - Dermal - NOEL :	Rat - Female	1 mg/kg	2 years; 5 days per week	
	Negative - Dermal - NOEL :	Mouse - Male	0.1 mg/kg	2 years; 3 days per week	

**Carcinogenic class**

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
glass,-oxide,-chemicals-	A4	3	-	-	-	-

**Mutagenicity**

Product/ingredient name	Test	Experiment	Result
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**11 . Toxicological information**

glycidylether of C12-C14 alcohols	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: <i>In vitro</i> Subject: Mammalian- Animal Metabolic activation: +/-	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: <i>In vivo</i> Subject: Mammalian- Animal Cell: Somatic Metabolic activation: +/-	Negative
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 471 Bacterial Reverse Mutation Test	Experiment: <i>In vitro</i> Subject: Bacteria Metabolic activation: +/-	Positive
	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: <i>In vitro</i> Subject: Mammalian- Animal Cell: Somatic Metabolic activation: +/-	Positive
	OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Experiment: <i>In vivo</i> Subject: Mammalian- Animal Cell: Germ	Negative
	EPA OPPTS	Experiment: <i>In vivo</i> Subject: Mammalian- Animal Cell: Somatic	Negative

**Teratogenicity**

Product/ingredient name	Result	Species	Dose	Exposure
glycidylether of C12-C14 alcohols	Negative - Dermal	Rat - Female	200 mg/kg NOEL :	10 days
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	Negative - Oral	Rat - Female	>540 mg/kg NOEL :	10 days
	Negative - Dermal	Rabbit - Female	>300 mg/kg NOEL :	13 days; 6 hours per day
	Negative - Oral	Rabbit - Female	180 mg/kg NOAEL	13 days

**Reproductive toxicity**

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	Negative	-	-	Rat - Male, Female	Oral: 540 mg/kg NOEL :	238 days; 7 days per week

**Potential chronic health effects**

Chronic effects	:	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Target organs	:	Not available.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	:	

## 11 . Toxicological information

Pre-existing skin disorders may be aggravated by over-exposure to this product.

## 12 . Ecological information

**Environmental effects** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	-	Acute EC50 9.4 mg/L Fresh water	Algae	72 hours Static
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50 1.7 mg/L Fresh water	<i>Daphnia</i>	48 hours Static
	-	Acute IC50 >100 mg/L Fresh water	Bacteria	3 hours Static
	OECD 203 Fish, Acute Toxicity Test	Acute LC50 1.5 mg/L Fresh water	Fish	96 hours Static
	OECD 211 <i>Daphnia Magna</i> Reproduction Test	Chronic NOEC 0.3 mg/L Fresh water	<i>Daphnia</i>	21 days Semi- static
glycidylether of C12-C14 alcohols	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EL50 7.2 mg/L Fresh water	<i>Daphnia</i>	48 hours Static
	OECD 201 Alga, Growth Inhibition Test	Acute IC50 843.75 mg/L Fresh water	Algae - <i>Selenastrum</i> <i>capricornutum</i> ( <i>Pseudokirchneriella</i> <i>subcapitata</i> )	72 hours Static
	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute IC50 >100 mg/L	Bacteria	3 hours
	OECD 203 Fish, Acute Toxicity Test	Acute LC50 5000 mg/L Fresh water	Fish - Rainbow trout ( <i>Oncorhynchus</i> <i>mykiss</i> , <i>Salmo</i> <i>gairdneri</i> )	96 hours Static

### Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum
Reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD Derived from OECD 301F (Biodegradation Test)	5 % - Not readily - 28 days	20 mg/L Oxygen consumption	-
glycidylether of C12-C14 alcohols	OECD 301F Ready Biodegradability - Manometric	87 % - Readily - 28 days	100 mg/L	-

**12 . Ecological information**Respirometry  
TestOther ecological information

Not Determined

Not Determined

Product/ingredient nameReaction product: bisphenol A-  
(epichlorhydrin); epoxy resin (number  
average molecular weight < 700)  
glycidylether of C12-C14 alcoholsAquatic half-lifeFresh water 4.83 days  
Fresh water 3.58 days  
Fresh water 7.1 days  
-Photolysis

-

Biodegradability

Not readily

Readily

Bioaccumulative potentialProduct/ingredient nameReaction product: bisphenol A-  
(epichlorhydrin); epoxy resin (number  
average molecular weight < 700)  
glycidylether of C12-C14 alcoholsLogP<sub>ow</sub>

3.242

BCF

31

Potential

low

high

**Other adverse effects** : No known significant effects or critical hazards.**PBT** : Not applicable.Other information**13 . Disposal considerations**

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

**14 . Transport information**Proper shipping name









**DOT** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (BISPHENOL A EPOXY RESIN) Marine pollutant

**TDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (BISPHENOL A EPOXY RESIN) Marine pollutant

**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN) Marine pollutant

**IATA** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN) Marine pollutant

## 14 . Transport information

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	UN3082	9	III	 	-
TDG Classification	UN3082	9	III	 	-
IMDG Class	UN3082	9	III	 	<b>Emergency schedules (EmS)</b> F-A, S-F
IATA-DGR Class	UN3082	9	III	 	<b>Passenger and Cargo Aircraft</b> Quantity limitation: 450 L Packaging instructions: 964 <b>Cargo Aircraft Only</b> Quantity limitation: 450 L Packaging instructions: 964  <b>Remarks</b> ***TO BE TRANSLATED***

PG\* : Packing group

## 15 . Regulatory information

### U.S. Federal regulations

- HCS Classification : Irritating material  
Sensitizing material
- U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
- TSCA 5(a)2 final significant new use rule (SNUR) : None.
- TSCA 5(e) substance consent order : None.
- TSCA 12(b) one-time export notification: : None.



## 15 . Regulatory information

TSCA 12(b) annual export notification : None.

SARA 302/304/311/312 extremely hazardous substances : SARA 302/304/311/312 extremely hazardous substances: No Ingredient Listed

SARA 311/312 hazard identification : SARA 311/312 MSDS distribution - chemical inventory - hazard identification: aluminium hydroxide: Immediate (acute) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Product name	CAS number	Concentration
	K-37 GLASS BUBBLES (100 BOX)	65997-17-3	13 - 30

Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 : No ingredients listed.

### CERCLA: Hazardous substances.

Components	Concentration %	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product Reportable Quantity (Lbs)
1-chloro-2,3-epoxypropane	5.2118713219584E-04	Listed	100	19186966

### STATE REGULATIONS:

PENNSYLVANIA - RTK: The following components are listed: ALUMINUM SOLUBLE SALTS

California Prop 65 :

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

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
1-chloro-2,3-epoxypropane	Yes.	Yes.	Yes.	No.

### Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).

CEPA DSL : All components are listed or exempted.

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

## 15 . Regulatory information

International lists : **Australia inventory (AICS):** All components are listed or exempted.  
**China inventory (IECSC):** All components are listed or exempted.  
**Japan inventory:** At least one component is not listed.  
**Korea inventory:** At least one component is not listed.  
**New Zealand Inventory of Chemicals (NZIoC):** Not determined.  
**Philippines inventory (PICCS):** All components are listed or exempted.

## 16 . Other information

Label requirements : CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.  
 Hazardous Material :  
 Information System (U.S.A.)

Health	2
Flammability	1
Physical hazards	0
Personal protection	

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



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☑ Indicates information that has changed from previously issued version.

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**IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.**

**THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.**

*Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.*

CG 1305 RO US

## **16 . Other information**

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