

# Material Safety Data Sheet

## EPOCAST® 8623 A US

### 1. Product and company identification

**Product name** : EPOCAST® 8623 A US  
**Material uses** : Resin for adhesive systems  
**MSDS #** : 00055277  
**Validation date** : 2/17/2012.  
**Print date** : 2/17/2012.

**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. [Paste.]  
**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. MAY BE HARMFUL IF SWALLOWED. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA. POSSIBLE REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES, BASED ON ANIMAL DATA.

Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not get in eyes or on skin or clothing. 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

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Diglycidyl ether of bisphenol A	1675-54-3	30 - 60
Glass oxide	65997-17-3	30 - 60
Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	25068-38-6	7 - 13
dibromo cresyl glycidyl ether	30171-80-3	3 - 7
Brominated bisphenol A epoxy resin	40039-93-8	3 - 7
butanedioldiglycidyl ether	2425-79-8	1 - 3
antimony trioxide	1309-64-4	0.1 - 1
xylene	1330-20-7	0.1 - 1

## 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: >185°C (>365°F) [Estimated]
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
phosphorus oxides  
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. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- 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). Water polluting material. May be harmful to the environment if released in large quantities.
- 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

## 6 . Accidental release measures

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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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 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** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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.

## 8 . Exposure controls/personal protection

**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. [Paste.]  
**Color** : White.  
**Odor** : Slight

### Important health, safety and environmental information

**pH** : Not available.  
**Boiling/condensation point** : Not available.  
**Melting/freezing point** : Not available.  
**Flash point** : Closed cup: >185°C (>365°F) [Estimated]  
**Flammable limits** : Not available.  
**Auto-ignition temperature** : Not available.  
**Vapor pressure** : <0.13 kPa (<0.9975 mm Hg) [20°C]  
**Specific gravity** : Not available.  
**Water solubility** : negligible  
**Partition coefficient: n-octanol/water (log Kow)** : Not available.  
**Density** : 0.6 to 0.64 g/cm<sup>3</sup>  
**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** : Harmful if swallowed.  
**Skin** : Severely irritating to the skin. May cause sensitization by skin contact.  
**Eyes** : Severely irritating to eyes. Risk of serious damage to eyes.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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
butanedioldiglycidyl ether	LD50 Dermal	Rat - Male, Female	>2150 mg/kg	-
	LD50 Oral	Rat - Male, Female	1163 mg/kg	-
antimony trioxide	LD50 Dermal	Rabbit	8300 mg/kg	-
	LD50 Oral	Rat	>20000 mg/g	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5.2 mg/L	4 hours
xylene	LD50 Dermal	Rabbit - Male	>4200 mg/kg	-
	LD50 Oral	Rat - Male	3523 mg/kg	-
	LC50 Inhalation Vapor	Rat - Male	29 mg/L	4 hours

### Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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
butanedioldiglycidyl ether	Sub-chronic NOAEL Oral	Rat - Male, Female	200 mg/kg	28 days; 7 days per week
antimony trioxide	Sub-chronic NOAEL Oral	Rat - Male, Female	1686 to 1879 mg/kg	90 days; 24 hours per day
	Chronic NOEC Inhalation Dusts and mists	Rat - Male, Female	>0.51 mg/m3	1 years; 6 hours per day
xylene	Sub-chronic LOAEL Oral	Rat - Male, Female	150 mg/kg	90 days; 7 days per week
	Chronic NOAEL Oral	Rat - Male, Female	250 mg/kg	103 weeks; 5 days per week
	Sub-chronic NOEC Inhalation Vapor	Rat - Male	>3515 mg/m3	13 weeks; 6 hours per day

### 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	-	-	-
butanedioldiglycidyl ether	Skin - Non-irritant.	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-
antimony trioxide	Eyes - Non-irritant.	Rabbit	-	-	-
	Skin - Non-irritant.	Rabbit	-	-	-

## 11 . Toxicological information

xylene	Skin - Irritant	Rabbit	-	-	-
	Eyes - Moderate irritant	Rabbit	-	-	-

**Skin** : Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700): Slightly irritating to the skin.  
butanedioldiglycidyl ether: Non-irritating to the skin.

**Eyes** : Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700): Slightly irritating to the eyes.  
butanedioldiglycidyl ether: Severely irritating to eyes.

### Sensitizer

Product/ingredient name	Route of exposure	Species	Result
Glass oxide	skin	Guinea pig	Sensitizing
Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	skin	Mouse	Sensitizing
butanedioldiglycidyl ether	skin	Guinea pig	Sensitizing
antimony trioxide	skin	Guinea pig	Not sensitizing
xylene	skin	Mouse	Not sensitizing

### Carcinogenicity

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
antimony trioxide	Positive - Inhalation - LOAEL	Rat - Female	45 mg/m3	1 years; 7 hours per day
xylene	Negative - Oral - NOEL :	Rat - Male, Female	500 mg/kg	103 weeks; 5 days per week

### Carcinogenic class

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Diglycidyl ether of bisphenol A	-	3	-	-	-	-
Glass oxide	A4	3	-	-	-	-
antimony trioxide	A2	2B	-	-	-	-
xylene	-	3	-	-	-	-

### Mutagenicity

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

## 11 . Toxicological information

butanedioldiglycidyl ether	OECD 471 Bacterial Reverse Mutation Test	Animal Cell: Somatic Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Positive
	OECD 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Animal Experiment: In vitro Subject: Mammalian- Metabolic activation: +/-	Positive
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Animal Experiment: In vivo Subject: Mammalian- Cell: Somatic	Negative

### Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
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
antimony trioxide	Negative - Inhalation	Rat - Female	6.3 mg/m3 NOAEL	20 days; 6 hours per day
xylene	Positive - Inhalation	Rat - Female	>8684 mg/m3 NOAEL	15 days; 6 hours per day

### 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	Negative	Negative	Rat - Male, Female	Oral: 540 mg/kg NOEL :	238 days; 7 days per week
antimony trioxide	-	-	-	Rat - Male, Female	Oral: NOAEL	90 days
xylene	-	-	-	Rat - Male, Female	Inhalation: >500 ppm NOAEL	111 days; 6 hours per day

### Potential chronic health effects

- Chronic effects** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Target organs** : No known significant effects or critical hazards.
- Carcinogenicity** : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Fertility effects** : Contains material which may impair female fertility, based on animal data.
- 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. Water polluting material. May be harmful to the environment if released in large quantities.

### 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	Daphnia	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	Daphnia	21 days Semi-static
triphenyl phosphate	-	Acute EC50 1.35 mg/L	Daphnia	48 hours
	-	Acute LC50 0.78 mg/L	Fish	96 hours
	-	Acute LC50 0.66 mg/L	Fish	96 hours
	-	Acute LC50 0.36 to 0.85 mg/L	Fish	96 hours
	-	Chronic NOEC 0.25 to 2.5 mg/L	Algae	72 hours
	-	Chronic NOEC 0.04 mg/L	Fish	30 days Flow-through
	-	Acute EC50 75 mg/L Fresh water	Daphnia	24 hours Static
butanedioldiglycidyl ether	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50 75 mg/L Fresh water	Daphnia	24 hours Static
	OECD 201 Alga, Growth Inhibition Test	Acute EL50 >160 mg/L Fresh water	Algae - <i>Selenastrum capricornutum</i> ( <i>Pseudokirchneriella subcapitata</i> )	72 hours Static
	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute IC50 >100 mg/L Fresh water	Bacteria	3 hours Static
	OECD 203 Fish, Acute Toxicity	Acute LC50 24 mg/L Fresh water	Fish	96 hours Static

## 12 . Ecological information

Test

### 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	-
triphenyl phosphate	-	>60 % - Readily - 28 days	-	-
butanedioldiglycidyl ether	OECD 301F Ready Biodegradability - Manometric Respirometry Test	43 % - Not readily - 28 days	20 mg/L Oxygen consumption	Activated sludge

### Other ecological information

**Biological Oxygen Demand (BOD 5 DAY)** : Not Determined

**Chemical Oxygen Demand (COD)** : Not Determined

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	Fresh water 4.83 days Fresh water 3.58 days Fresh water 7.1 days	-	Not readily
triphenyl phosphate	-	-	Readily
butanedioldiglycidyl ether	-	-	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	3.242	31	low
triphenyl phosphate	4.59 to 4.76	132	high
butanedioldiglycidyl ether	-0.269	-	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** : Environmentally hazardous substance, liquid, n.o.s. (TRIPHENYL PHOSPHATE,BISPHENOL A EPOXY RESIN) Marine pollutant
- TDG** : Environmentally hazardous substance, liquid, n.o.s. (TRIPHENYL PHOSPHATE,BISPHENOL A EPOXY RESIN) Marine pollutant
- IMDG** : Environmentally hazardous substance, liquid, n.o.s.(TRIPHENYL PHOSPHATE,BISPHENOL A EPOXY RESIN) Marine pollutant
- IATA** : Environmentally hazardous substance, liquid, n.o.s. (TRIPHENYL PHOSPHATE,BISPHENOL A EPOXY RESIN) Marine pollutant

Regulatory information	UN number	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	UN3082	9	III	 	Only regulated for bulk and vessel shipments, per 49CFR171.4 (c) Exceptions. Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.
<b>TDG Classification</b>	UN3082	9	III	 	-
<b>IMDG Class</b>	UN3082	9	III	 	<b>Emergency schedules (EmS)</b> F-A, S-F
<b>IATA-DGR Class</b>	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

## 14 . Transport information

PG\* : Packing group

## 15 . Regulatory information

### U.S. Federal regulations

- HCS Classification** : Irritating material  
Sensitizing material  
Carcinogen
- 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)**
- | <b>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</b> | <b>: <u>Product name</u></b> | <b><u>CAS number</u></b> | <b><u>Concentration</u></b> |
|---|------------------------------|--------------------------|-----------------------------|
|   | Glass oxide                  | 65997-17-3               | 30 - 60                     |
- 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:** None of the components are listed.

**California Prop 65 :**

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

## 15 . Regulatory information

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>	<u>No significant risk level</u>	<u>Maximum acceptable dosage level</u>
antimony trioxide	Yes.	No.	No.	No.
2,3-epoxy-1-propanol	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	No.	No.
Toluene	No.	Yes.	No.	7000 µg/day (ingestion)
arsenic	Yes.	No.	No.	No.

### Canada

**WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).  
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.

**International lists** :

- Australia inventory (AICS)**: At least one component is not listed.
- 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)**: All components are listed or exempted.
- Philippines inventory (PICCS)**: At least one component is not listed.

## 16 . Other information

**Label requirements** : CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA. POSSIBLE REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES, BASED ON ANIMAL DATA.

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

Health	*	2
Flammability		1
Physical hazards		1
Personal protection		

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

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



**Date of printing** : 2/17/2012.  
**Date of issue** : 2/17/2012.  
**Date of previous issue** : No previous validation.

## 16 . Other information

Version : 1

▣ 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

## HARDENER 9861 US

### 1. Product and company identification

**Product name** : HARDENER 9861 US  
**Material uses** : Adhesive system  
**MSDS #** : 00066308  
**Validation date** : 2/16/2012.  
**Print date** : 2/17/2012.

**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.  
**Color** : Amber.  
**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Emergency overview** : WARNING!

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Do not breathe vapor or mist. 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

<u>Name</u>	<u>CAS number</u>	<u>%</u>
N,N"-[1,7-heptanediy]bis[(4,5-dihydro-1H-imidazole-2,1-diyl)-2,1-ethanediy]]bis1,2-ethanediamine	179796-73-7	60 - 100
3-aminopropyltriethoxysilane	919-30-2	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** : 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: 135°C (275°F)
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
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. 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 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

Consult local authorities for acceptable exposure limits.

- 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. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)
- 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 : Not available.

### Important health, safety and environmental information

pH : Not available.  
 Boiling/condensation point : Not available.  
 Melting/freezing point : Not available.  
 Flash point : Closed cup: 135°C (275°F)  
 Flammable limits : Not available.  
 Auto-ignition temperature : Not available.  
 Vapor pressure : Not available.  
 Specific gravity : 1.05  
 Partition coefficient: n-octanol/water (log Kow) : Not available.  
 Density : Not available.  
 Vapor density : Not available.  
 Evaporation rate (butyl acetate = 1) : <1 (butyl acetate = 1)  
 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.

**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** : Severely irritating to the respiratory system.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin** : Severely irritating to the skin. May cause sensitization by skin contact.  
**Eyes** : Severely irritating to eyes. Risk of serious damage to eyes.

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
3-aminopropyltriethoxysilane	LD50 Dermal	Rabbit - Male, Female	4.29 ml/kg	-
	LD50 Oral	Rat - Male, Female	1.57 to 2.83 ml/kg	-
	LC50 Inhalation Vapor	Rat - Male	>5 ppm	6 hours

### Chronic toxicity

## 11 . Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
3-aminopropyltriethoxysilane	Sub-chronic NOAEL Oral	Rat - Male, Female	200 mg/kg	90 days

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
3-aminopropyltriethoxysilane	Eyes - Corrosive	Rabbit	-	-	-
	Skin - Corrosive	Rabbit	-	-	-

**Skin** : 3-aminopropyltriethoxysilane: Corrosive to the skin.

**Eyes** : 3-aminopropyltriethoxysilane: Corrosive to eyes.

### Sensitizer

Product/ingredient name	Route of exposure	Species	Result
3-aminopropyltriethoxysilane	skin	Guinea pig	Sensitizing

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
3-aminopropyltriethoxysilane	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian- Animal	Negative

### Potential chronic health effects

**Chronic effects** : Contains material that can cause target organ damage. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Target organs** : Contains material which causes 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** : No known significant effects or critical hazards.

### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
3-aminopropyltriethoxysilane	EU EC C.3 Algal Inhibition Test	Acute EC50 >1000 mg/L Fresh water	Algae	72 hours Static
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50 331 mg/L Fresh water	Daphnia	48 hours Static

## 12 . Ecological information

-	Acute EC50 43 mg/L Fresh water	Bacteria	5.75 hours Static
OECD 203 Fish, Acute Toxicity Test	Acute LC50 >934 mg/L Fresh water	Fish	96 hours Semi-static

### Biodegradability

**Product/ingredient name**

3-aminopropyltriethoxysilane

**Test**

EU EC C.4-A Biodegradation: Determination of the "Ready" Biodegradability: Dissolved Organic Carbon (DOC) Die-Away Test

**Result**

67 % - Not readily - 28 days

**Dose**

8.95 mg/L ThCO<sub>2</sub>

**Inoculum**

0.0268 mg/L Activated sludge

### Other ecological information

**Biological Oxygen Demand (BOD 5 DAY)** : Not Determined

**Chemical Oxygen Demand (COD)** : Not Determined

Product/ingredient name

3-aminopropyltriethoxysilane

Aquatic half-life

-

Photolysis

-

Biodegradability

Not readily

Bioaccumulative potential

Product/ingredient name

3-aminopropyltriethoxysilane

LogP<sub>ow</sub>

1.7

BCF

3.4

Potential

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** : Not regulated.
- TDG** : Not regulated.
- IMDG** : Not regulated.
- IATA** : Not regulated.

Regulatory information	UN number	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	Not regulated.	-	-		-
<b>TDG Classification</b>	Not regulated.	-	-		-
<b>IMDG Class</b>	Not regulated.	-	-		-
<b>IATA-DGR Class</b>	Not regulated.	-	-		-

PG\* : Packing group

## 15 . Regulatory information

U.S. Federal regulations

**HCS Classification** : Irritating 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

**Clean Air Act Section 111 - Volatile Organic Compounds (VOC)**

**Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)** : Product name : CAS number : Concentration  
No Ingredients Listed.



## 15 . Regulatory information

**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:** None of the components are listed.

**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-2B: Material causing other toxic effects (Toxic).

**CEPA DSL** : At least one component is not listed.

**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):** At least one component is not listed.
- China inventory (IECSC):** At least one component is not listed.
- Japan inventory:** At least one component is not listed.
- Korea inventory:** At least one component is not listed.
- New Zealand Inventory of Chemicals (NZIoC):** At least one component is not listed.
- Philippines inventory (PICCS):** At least one component is not listed.

## 16 . Other information

**Label requirements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

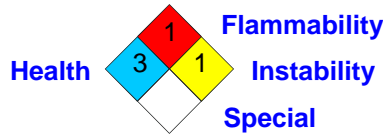
**Hazardous Material Information System (U.S.A.)** :

Health	3
Flammability	1
Physical hazards	1
Personal protection	

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

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

## 16 . Other information



Date of printing : 2/17/2012.  
Date of issue : 2/16/2012.  
Date of previous issue : No previous validation.  
Version : 1

☑ Indicates information that has changed from previously issued version.

### Notice to reader

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