Material Safety Data Sheet

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EPOCAST® 1627-2 US

1 . Product and company identification

EPOCAST® 1627-2 US

Material uses : Adhesive system
MSDS # : 00070975
Validation date : 11/22/2011.
Print date : 12/30/2011.

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 : Solid. [Paste.]
Odor : Pungent.
Color : Gray.

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 RESPIRATORY AND SKIN REACTION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

Avoid exposure - obtain special instructions before use. 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	%
hexahydrophthalic anhydride	85-42-7	7 - 13
Diglycidyl ether of bisphenol A	1675-54-3	3 - 7
epoxy carboxylate	2386-87-0	3 - 7
quartz (SiO2)	14808-60-7	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: >118°C (>244.4°F) [PMCC]

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
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. 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 : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. 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 or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. 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: -40 to -18°C (-40 to -0.4°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
hexahydrophthalic anhydride	**ACGIH TLV (United States, 2/2010). Skin sensitizer.** C: 0.005 mg/m³ Form: Inhalable fraction
quartz (SiO2)	**OSHA PEL Z3 (United States, 9/2005).** TWA: 250 mppcf 8 hour(s). Form: Respirable TWA: 10 mg/m³ 8 hour(s). Form: Respirable TWA: 30 mg/m³ 8 hour(s). Form: Total dust. **ACGIH TLV (United States, 2/2010).** TWA: 0.025 mg/m³ 8 hour(s). Form: Respirable 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 : 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.

8 . Exposure controls/personal protection

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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 : Solid. [Paste.]

Color : Gray.

Odor : Pungent.

Important health, safety and environmental information

pH : Not available.

Boiling/condensation point : Not available.

Melting/freezing point : Not available.

Flash point : Closed cup: >118°C (>244.4°F) [PMCC]

Flammable limits : Not available.

Auto-ignition temperature : Not available.

Vapor pressure : <0.14 kPa (<1.05 mm Hg) [20°C]

Specific gravity : Not available.

Water solubility : Reacts with water

Partition coefficient: n-octanol/water (log Kow) : Not available.

Density : 1.15 g/cm^3 [25°C (77°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.

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 : May cause sensitization by inhalation.

Ingestion : No known significant effects or critical hazards.

Skin : Irritating to skin. May cause sensitization by skin contact.

Eyes : Severely irritating to eyes. Risk of serious damage to eyes.

Product/ingredient name	Result	Species	Dose	Exposure
hexahydrophthalic anhydride	LD50 Oral	Rat	3307 mg/kg	-
epoxy carboxylate	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	5000 mg/kg	-

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
epoxy carboxylate	Sub-chronic NOEL : Oral	Rat - Male, Female	5 mg/kg/d	92 days; 7 days per week

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
epoxy carboxylate	skin	Guinea pig	Sensitizing

Carcinogenic class

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Diglycidyl ether of bisphenol A	-	3	-	-	-	-
quartz (SiO2)	A2	1	-	+	-	-

Mutagenicity

Product/ingredient name	Test	Experiment	Result
epoxy carboxylate	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Cell: Somatic Metabolic activation: +/-	Positive
	OECD 476 *In vitro* Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Positive
	EU	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
	OECD 486 Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells *in vivo*	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
epoxy carboxylate	Positive - Oral	Rat - Female	125 mg/kg NOAEL	14 days

Potential chronic health effects

11 . Toxicological information

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 can cause cancer. 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 : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure

Pre-existing respiratory and skin disorders 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
epoxy carboxylate	OECD 202 *Daphnia* sp. Acute Immobilisation Test	Acute EC50 40 mg/L Fresh water	Daphnia	48 hours Static
	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute EC50 >2000 mg/kg Fresh water	Bacteria	3 hours Static
	OECD 201 Alga, Growth Inhibition Test	Acute EbC50 (biomass) 90 mg/L Fresh water	Algae	72 hours Static
	OECD 203 Fish, Acute Toxicity Test	Acute LC50 24 mg/L Fresh water	Fish	96 hours Flow-through

Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum
epoxy carboxylate	OECD 301B Ready Biodegradability - CO_2 Evolution Test	71 % - Readily - 28 days	20 mg/L Carbon dioxide production	30 mg/L 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
epoxy carboxylate	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential

12 . Ecological information

epoxy carboxylate	1.34	-	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
DOT Classification	Not regulated.	-	-		-
TDG Classification	Not regulated.	-	-		-
IMDG Class	Not regulated.	-	-		-
IATA-DGR Class	Not regulated.	-	-		-

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.

15 . Regulatory information

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 112(b) Hazardous Air Pollutants (HAPs) : **Product name** **CAS number** **Concentration**
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: QUARTZ (SIO2)

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.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
quartz (SiO2)	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	No.	No.
Toluene	No.	Yes.	No.	7000 µg/day (ingestion)

Canada

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

15 . Regulatory information

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): Not determined.
Philippines inventory (PICCS): At least one component is not listed.

16 . Other information

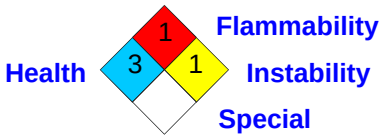
Label requirements : CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

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.) :



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Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon

16 . Other information

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.

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