


MATERIAL SAFETY DATA SHEET

Epichlorohydrin

MSDS Name:	Epichlorohydrin
Synonyms:	1-Chloro-2,3-epoxypropane
Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
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Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
106-89-8	Epichlorohydrin	>99.5%	203-439-8

Hazard Symbols:	T
	
Risk Phrases:	45 10 23/24/25 34 43

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable. Toxic by inhalation, in contact with skin and if swallowed. Causes burns. May cause sensitization by skin contact. May cause cancer.

Potential Health Effects

Eye:	Causes eye burns.
Skin:	Causes skin burns. Toxic in contact with skin. May cause sensitization by skin contact.
Ingestion:	Causes gastrointestinal tract burns. Toxic if swallowed.
Inhalation:	Causes chemical burns to the respiratory tract. Toxic if inhaled.
Chronic:	

Section 4 - First Aid Measures

Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin:	Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation:	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician:	Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Flammable liquid and vapor.
Extinguishing Media:	Use water spray, dry chemical, carbon dioxide, or chemical foam.

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool.

Section 7 - Handling and Storage

Handling:	Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood.
Storage:	Keep away from sources of ignition. Keep refrigerated. (Store below 4°C/39°F.) Store in a tightly closed container. Store in a dry area. Flammables-area. Corrosives area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits	<p>CAS# 106-89-8:</p> <p>United Kingdom, WEL - TWA: 0.5 ppm TWA; 1.9 mg/m³ TWA United Kingdom, WEL - STEL: 1.5 ppm STEL; 5.8 mg/m³ STEL</p> <p>United States OSHA: 5 ppm TWA; 19 mg/m³ TWA</p> <p>Belgium - TWA: 2 ppm VLE; 7.7 mg/m³ VLE</p> <p>France - VLE: 2 ppm VLE; 10 mg/m³ VLE</p> <p>Germany: 3 ppm TWA; 12 mg/m³ TWA Germany: skin notation</p> <p>Malaysia: 0.5 ppm TWA; 1.9 mg/m³ TWA</p> <p>Russia: 1 mg/m³ TWA (vapour)</p> <p>Spain: 0.5 ppm VLA-ED; 1.9 mg/m³ VLA-ED</p>

Personal Protective Equipment

Eyes:	Wear chemical splash goggles.
Skin:	Wear appropriate protective gloves to prevent skin exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Color:	APHA: 15 max
Odor:	Not available
pH:	Not available
Vapor Pressure:	17.3 mbar @ 20 deg C
Viscosity:	1.12 cP 20 deg C
Boiling Point:	115 - 117 deg C @ 760.00mm Hg
Freezing/Melting Point:	-57 deg C (-70.60°F)
Autoignition Temperature:	385 deg C (725.00 deg F)
Flash Point:	28 deg C (82.40 deg F)
Explosion Limits: Lower:	3.80 vol %
Explosion Limits: Upper:	21.00 vol %
Decomposition Temperature:	Not available
Solubility in water:	6g/100ml (10°C)
Specific Gravity/Density:	1.1870 g/cc
Molecular Formula:	C3H5ClO
Molecular Weight:	92.52

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures. Polymerization may occur upon heating.
Conditions to Avoid:	Incompatible materials, light, ignition sources, heat.
Incompatibilities with Other Materials	Acids, bases, alcohols, aluminum, amines, ammonia, magnesium, zinc, sodium.
Hazardous Decomposition Products	Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#:	CAS# 106-89-8: TX4900000
LD50/LC50:	RTECS: CAS# 106-89-8: Draize test, rabbit, eye: 100 mg Severe; Draize test, rabbit, eye: 100 mg/24H Moderate; Inhalation, rat: LC50 = 250 ppm/8H; Oral, mouse: LD50 = 195 mg/kg; Oral, rabbit: LD50 = 345 mg/kg; Oral, rat: LD50 = 90 mg/kg; Skin, rabbit: LD50 = 515 mg/kg;
Carcinogenicity:	Epichlorohydrin - ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans California: carcinogen, initial date 10/1/87 NTP: Suspect carcinogen IARC: Group 2A carcinogen
Other:	See actual entry in RTECS for complete information. Mutagenicity: Ames-test: positive. Possible carcinogen.

Section 12 - Ecological Information

Ecotoxicity:	Daphnia: EC50: 24 mg/l; 48H; Bacteria: EC50: 1160 mg/l; 15MIN; Fish: Pimephals prome: LC50: 10.6-13.2 mg/l; 96H;
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	Fish: Zebrafish: LC50: 30.5 mg/l; 96H;
Other:	Biodegradable. log Pow: 0.30 - 0.45

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	EPICHLOROHYDRIN	EPICHLOROHYDRIN	EPICHLOROHYDRIN
Hazard Class:	6.1 (3)	6.1 (3)	6.1 (3)
UN Number:	2023	2023	2023
Packing Group:	II	II	II

USA RQ: CAS# 106-89-8: 100 lb final RQ; 45.4 kg final RQ, Marine Pollutant

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

- R 45 May cause cancer.
- R 10 Flammable.
- R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R 34 Causes burns.
- R 43 May cause sensitization by skin contact.

Safety Phrases:

- S 53 Avoid exposure - obtain special instructions before use.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

- CAS# 106-89-8: 3

Canada

- CAS# 106-89-8 is listed on Canada's DSL List

US Federal

- TSCA
- CAS# 106-89-8 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: July 22, 2015

Revision #0 Date

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