OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

MATERIAL SAFETY DATA SHEET

EPICHLORHYDRIN 99% AR
(1-Chloro-2,3-Epoxypropane)
MSDS CAS: 106-89-8

Section 1: Chemical Product and Company Identification

Section 1: Chemical Product
Product Name: EPICHLORHYDRIN AR
CAS#: 106-89-8
Synonym: 1-Chloro-2,3-Epoxypropane
Chemical Name: Epichlorhydrin AR
Chemical Formula: $C_3H_5C_{10}$

Brand: OXFORD

Details Of The Supplier Of The Safety Data Sheet :

Company identification: **OXFORD LAB FINE CHEM LLP**
Unit. No. 12, 1st Floor, Neminath Industrial Estate No. 6,
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Mumbai, Maharashtra, INDIA.
Tel: 91-250-2390989
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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Epichlorhydrin AR	106-89-8	100

Toxicological Data on Ingredients: **Epichlorohyrin: ORAL (LD50): Acute: 90 mg/kg [Rat]. 195 mg/kg [Mouse]. 345 mg/kg [Rabbit]. DERMAL (LD50): Acute: 250 mg/kg [Mouse].**

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Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant). Corrosive to skin and eyes on contact. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Classified + (PROVEN) by OSHA+ (PROVEN) by NIOSH. Classified A3 (Proven for animal.) by ACGIH. Classified 2A (Probable for human.) by IARC, 2 (Reasonably anticipated.) by NTP. MUTAGENIC EFFECTS: Classified POSSIBLE for human. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male, Development toxin [POSSIBLE]. The substance is toxic to kidneys, lungs, liver, and skin. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:

If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Section 4: First Aid Measures (Continued)

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: **Not available.**

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 411°C (771.8°F)

Flash Points: CLOSED CUP: 31°C (87.8°F).

Flammable Limits: LOWER: 3.8% UPPER: 21%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Flammable in presence of shocks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

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Section 5: Fire and Explosion Data (Continued)

Special Remarks on Fire Hazards: **Not available.**

Special Remarks on Explosion Hazards: **Not available.**

Section 6: Accidental Release Measures

Small Spill:
Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid. Corrosive liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV.
Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. Never add water to this product Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes Keep away from incompatibles such as acids, alkalis.

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

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Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

United States: TWA: 0.5 (ppm) from ACGIH (TLV) SKIN United States: TWA: 0.5 (ppm) from OSHA (PEL) Denmark: TWA: 0.5 (ppm) SKIN Hungary: STEL: 1 (mg/m3) SKIN Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor	**: Irritating Chloroform-like**
Taste	**: Not available.**
Molecular Weight	**: 92.48 g/mole**
Color	**: Clear Colorless.**
pH (1% soln/water)	**: Not applicable.**
Boiling Point	**: 115°C (239°F)**
Melting Point	**: -48°C (-54.4°F)**
Critical Temperature	**: Not available.**
Specific Gravity	**: Not available.**
Vapor Pressure	**: 13 mm of Hg (@ 20°C)**
Vapor Density	**: 3.29 (Air = 1)**
Volatility	**: Not available.**
Odor Threshold	**: Not available.**

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Section 9: Physical and Chemical Properties (Continued)

Water/Oil Dist. Coeff. : **The product is more soluble in oil; log(oil/water) = 0.3**
Ionicity (in Water) : **Not available.**
Dispersion Properties : **Dispersed in methanol, diethyl ether. Partially dispersed in n-octanol. Very slightly dispersed in cold water, hot water. See solubility in methanol, diethyl ether, n-octanol.**
Solubility : **Soluble in methanol, diethyl ether. Partially soluble in n-octanol. Very slightly soluble in cold water, hot water.**

Section 10: Stability and Reactivity Data

Stability: **The product is stable.**

Instability Temperature: **Not available.**

Conditions of Instability: **Not available.**

Incompatibility with various substances: **Reactive with acids, alkalis.**

Corrosivity: **Not available.**

Special Remarks on Reactivity:
Expolsive reactions with aniline, trichlorochloroethylene, potassium tert-butoxide, sulfuric acid or isopropylamine.

Special Remarks on Corrosivity: **Not available.**

Polymerization: **Yes.**

Section 11: Toxicological Information

Routes of Entry: **Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.**

Toxicity to Animals:
Acute oral toxicity (LD50): 90 mg/kg [Rat]. Acute dermal toxicity (LD50): 250 mg/kg [Mouse].

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Section 11: Toxicological Information (Continued)

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified + (PROVEN) by OSHA+ (PROVEN) by NIOSH. Classified A3 (Proven for animal.) by ACGIH. Classified 2A (Probable for human.) by IARC, 2 (Reasonably anticipated.) by NTP. MUTAGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male, Development toxin [POSSIBLE]. The substance is toxic to kidneys, lungs, liver, and skin.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).

Special Remarks on Toxicity to Animals: **Not available.**

Special Remarks on Chronic Effects on Humans: **Not available.**

Special Remarks on other Toxic Effects on Humans: **Not available.**

Section 12: Ecological Information

Ecotoxicity: **Ecotoxicity in water (LC50): 11104 ppm 96 hour(s) [Goldfish].**

BOD5 and COD: **Not available.**

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation:
The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: **Not available.**

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Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

Land transport (ADR-RID)

Proper shipping name: EPICHLOROHYDRIN
UN N°: 2023
H.I. nr: 63
ADR - Class: 6.1
Labelling - Transport: 6.1 : Toxic substances. 3 : Flammable liquid.
ADR - Group: II

Sea transport (IMDG) [English only]

Proper shipping name: EPICHLOROHYDRIN
UN N°: 2023
IMO-IMDG - Class or division: 6.1 : Toxic substances. (3 : Flammable liquid.)
IMO-IMDG - Packing group: II

Air transport (ICAO-IATA) [English only]

Proper shipping name: EPICHLOROHYDRIN
UN N°: 2023
IATA - Class or division: 6.1 : Toxic substances. (3 : Flammable liquid.)
IATA - Packing group: II

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Section 15: Other Regulatory Information

Federal and State Regulations:

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Epichlorohyrin California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Epichlorohyrin California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Epichlorohyrin Pennsylvania RTK: Epichlorohyrin Florida: Epichlorohyrin Minnesota: Epichlorohyrin Massachusetts RTK: Epichlorohyrin New Jersey: Epichlorohyrin TSCA 8(b) inventory: Epichlorohyrin TSCA 12(b) one time export: Epichlorohyrin TSCA 12(b) annual export notification: Epichlorohyrin

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC): R10- Flammable. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns. R43- May cause sensitization by skin contact. R45- May cause cancer.

HMIS (U.S.A.):

Health Hazard: 3
Fire Hazard: 3
Reactivity: 0
Personal Protection: h

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

Health: 3
Flammability: 3
Reactivity: 2
Specific hazard:

Protective Equipment:

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

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Section 16 - Additional Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

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