EPICHLOROHYDRIN
CAS No 106-89-8

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
   Product name: Epichlorohydrin
   CAS-No.: 106-89-8

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses: Laboratory chemicals, Industrial & for professional use only

1.3 Details of the supplier of the safety data sheet
   Company: Central Drug House (P) Ltd
   Address: 7/28 Varadaan House
   New Delhi -110002
   INDIA
   Telephone: +91 11 49404040
   Email: care@cdhfinechemical.com

1.4 Emergency telephone number
   Emergency Phone #: +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Flammable liquids (Category 3), H226
   Acute toxicity, Oral (Category 3), H301
   Acute toxicity, Inhalation (Category 3), H331
   Acute toxicity, Dermal (Category 3), H311
   Skin corrosion (Category 1B), H314
   Skin sensitisation (Category 1), H317
   Carcinogenicity (Category 1B), H350

   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
   Labelling according Regulation (EC) No 1272/2008
   Pictogram

   Signal word: Danger
Hazard statement(s)
H226 Flammable liquid and vapour.
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled
H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.
H350 May cause cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements
none

Restricted to professional users.

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms : 1-Chloro-2,3-epoxypropane
(±)-2-(Chloromethyl)oxirane

Formula : C₃H₅CIO
Molecular weight : 92.53 g/mol
CAS-No. : 106-89-8
EC-No. : 203-439-8
Index-No. : 603-026-00-6

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epichlorohydin</td>
<td>106-89-8</td>
<td>Flam. Liq. 3; Acute Tox. 3; Carc. 1B;</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-439-8</td>
<td>Skin Corr. 1B; Skin Sens. 1; H226, H301, H311,</td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-026-00-6</td>
<td>H314, H317, H350</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. 
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. 
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. 
Store under inert gas. 
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals. Flame retardant antistatic protective clothing,. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: clear, liquid
   Colour: colourless
b) Odour
   No data available

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: -57 °C - lit.

f) Initial boiling point and boiling range
   115 - 117 °C - lit.

g) Flash point
   32 °C - closed cup

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   No data available

j) Upper/lower flammability or explosive limits
   Upper explosion limit: 21 % (V)
   Lower explosion limit: 3.8 % (V)

k) Vapour pressure
   13.8 mmHg at 21.1 °C

l) Vapour density
   3.19 - (Air = 1.0)

m) Relative density
   1.183 g/cm³ at 25 °C

n) Water solubility
   No data available

o) Partition coefficient: n-octanol/water
   No data available

p) Auto-ignition temperature
   No data available

q) Decomposition temperature
   No data available

r) Viscosity
   No data available

s) Explosive properties
   No data available

t) Oxidizing properties
   No data available

9.2 Other safety information

Relative vapour density

3.19 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

   No data available

10.2 Chemical stability

   Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

   No data available

10.4 Conditions to avoid

   Heat, flames and sparks.

10.5 Incompatible materials

   acids, Bases, Ammonia, Amines, Sodium/sodium oxides, Zinc, Magnesium, Aluminum, and its alloys, Halides

10.6 Hazardous decomposition products

   Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
   Other decomposition products - No data available
   In the event of fire: see section 5

Page 5 of 8
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 90 mg/kg (Epichlorhydrin)  
LC50 Inhalation - Rat - 8 h - 250 ppm (Epichlorhydrin)  
Dermal: No data available (Epichlorhydrin)

Skin corrosion/irritation  
Skin - Rabbit (Epichlorhydrin) Result:  
Open irritation test - 24 h

Serious eye damage/eye irritation  
Eyes - Rabbit (Epichlorhydrin)  
Result: Severe eye irritation

Respiratory or skin sensitisation  
May cause sensitisation by skin contact (Epichlorhydrin)

Germ cell mutagenicity  
May alter genetic material (Epichlorhydrin)

Carcinogenicity  
This product is or contains a component that has been reported to be proba EPA classification (Epichlorhydrin)  
Possible human carcinogen (Epichlorhydrin) (Epichlorhydrin)

IARC: 2A - Group 2A: Probably carcinogenic to humans (Epichlorhydrin)

Reproductive toxicity  
No data available (Epichlorhydrin)

Specific target organ toxicity - single exposure  
No data available (Epichlorhydrin)

Specific target organ toxicity - repeated exposure  
No data available

Aspiration hazard  
No data available (Epichlorhydrin)

Additional Information  
RTECS: TX4900000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough (Epichlorhydrin)

SECTION 12: Ecological information

12.1 Toxicity  
Toxicity to fish  
LC50 - Pimephales promelas (fathead minnow) - 10.6 mg/l - 96 h (Epichlorhydrin)

Toxicity to daphnia and other aquatic invertebrates  
LC50 - Daphnia magna (Water flea) - 21 mg/l - 48 h (Epichlorhydrin)

12.2 Persistence and degradability  
No data available
12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available (Epichlorohydrin)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Harmful to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 2023 IMDG: 2023 IATA: 2023

14.2 UN proper shipping name
ADR/RID: EPICHLOROHYDRIN
IMDG: EPICHLOROHYDRIN
IATA: EPICHLOROHYDRIN

14.3 Transport hazard class(es)
ADR/RID: 6.1 (3) IMDG: 6.1 (3) IATA: 6.1 (3)

14.4 Packaging group
ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: yes IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H301 + H311 + Toxic if swallowed, in contact with skin or if inhaled
H331
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H350 May cause cancer.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.