



SAFETY DATA SHEET EPICHLOROHYDRIN

1. Identification

Product identifier

Product name EPICHLOROHYDRIN

CAS number 106-89-8

Recommended use of the chemical and restrictions on use

Application The manufacturing of polymeric Epoxy resin is the main monomer use for Epichlorohydrin (ECH). ECH is fully reacted into polymeric substances with a residual monomer content of much less than 0.01 %.

Other monomer use of ECH are:

Monomers in industrial manufacture of polymeric ion exchange resins.

Monomer in manufacture of wet strength resins for polymeric paper coating products.

Monomer for industrial manufacture of polymeric rubber products.

Sector of Use SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

Product Category PC19 Intermediate

Process category PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.
 PROC15: Use as laboratory reagent.
 PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

Environmental release category ERC1 Manufacture of the substance

Application of the substance / the mixture Chemicals for synthesis

Details of the supplier of the safety data sheet

Manufacturer Jubail Chemical Industries Company (JANA)
 P.O.BOX - 11919
 Jubail Industrial City - 31961
 Saudi Arabia
 Tel. +966 13 3478888 ext 351
 Fax. +966 13 3476705
 safety@nama.com.sa

Only Representative REACH 1907/2006/EC Article 8 NAMA Germany
 Teichstrasse 38
 D-79539 Lörrach
 Tel. + 49 762 1940 5410
 Fax. + 49 762 1940 5420

EPICHLOROHYDRIN

Emergency telephone number

Emergency telephone Emergency CONTACT (24-Hour-Number):GBK GmbH +49 (0)6132-84463

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Flam. Liq. 3 - H226

Health hazards Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Carc. 1B - H350

Environmental hazards Not Classified

Label elements

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation

Pictogram



Signal word

Danger

Hazard-determining components of labelling

1-chloro-2,3-epoxypropane

Hazard statements

H226 Flammable liquid and vapor.
 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.

EPICHLOROHYDRIN

Precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.</p> <p>P240 Ground/ bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical equipment.</p> <p>P242 Use only non-sparking tools.</p> <p>P243 Take precautionary measures against static discharge.</p> <p>P260 Do not breathe vapor/ spray.</p> <p>P261 Avoid breathing vapor/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing must not be allowed out of the workplace.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301+P310 If swallowed: Immediately call a poison center/ doctor.</p> <p>P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352 If on skin: Wash with plenty of water.</p> <p>P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.</p> <p>P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P308+P313 If exposed or concerned: Get medical advice/ attention.</p> <p>P311 Call a poison center/ doctor.</p> <p>P312 Call a poison center/ doctor if you feel unwell.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P361+P364 Take off immediately all contaminated clothing and wash it before reuse.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
---------------------------------	--

3. Composition/information on ingredients

Substances

Product name	EPICHLOROHYDRIN
CAS number	106-89-8

4. First-aid measures

Description of first aid measures

General information	Promptly remove any clothing that becomes contaminated. For breathing difficulties, oxygen may be necessary.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Most important symptoms and effects, both acute and delayed

EPICHLOROHYDRIN

Ingestion	IF SWALLOWED: Do not induce vomiting. Get medical attention immediately. Promptly get affected person to drink large volumes of water to dilute the swallowed chemical.
Skin contact	IF ON SKIN: Wash skin thoroughly with soap and water.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention immediately.

Indication of immediate medical attention and special treatment needed

Notes for the doctor No information available.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Water spray, dry powder or carbon dioxide. Alcohol-resistant foam.

Special hazards arising from the substance or mixture

Specific hazards No information available.

Advice for firefighters

Special protective equipment for firefighters Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Keep unnecessary and unprotected personnel away from the spillage.

Environmental precautions

Environmental precautions Flush contaminated area with plenty of water.

Methods and material for containment and cleaning up

Methods for cleaning up Contain and absorb spillage with sand, earth or other non-combustible material. Cleaning agent. Collect and dispose of spillage as indicated in Section 13. Provide adequate ventilation.

Reference to other sections Follow precautions for safe handling described in this safety data sheet. For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Provide adequate general and local exhaust ventilation. Handle and open container with care.

Information about fire - and explosion protection Eliminate all ignition sources if safe to do so. Do not smoke in work area. Take precautionary measures against static discharges. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage precautions No special storage precautions required.

Storage class Keep container tightly sealed when not in use.

Specific end uses(s)

Specific end use(s) No information available.

EPICHLOROHYDRIN

8. Exposure Controls/personal protection

MAK (Germany)/MAK (EU) Long-term value: 200 mg/m³, 300 ppm

Additional information: The lists valid during the making were used as basis

Exposure controls

Protective equipment



Personal protection

Keep away from food, drink and animal feeding stuffs. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Avoid contact with skin and eyes. Contaminated clothing should be placed in a closed container for disposal or decontamination.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield.

Hand protection

Wear protective gloves. For users with sensitive skin, it is recommended that suitable protective gloves are worn. It is recommended that gloves are made of the following material: Butyl rubber. Thickness: ≥ 0.7 mm Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.

Other skin and body protection

Wear protective clothing.

Hygiene measures

Keep away from food, drink and animal feeding stuffs. Wash hands thoroughly after handling. Avoid contact with skin, eyes and clothing. Use appropriate skin cream to prevent drying of skin.

Respiratory protection

Gas filter, type AX. Ensure suitable respiratory protection is worn during removal of spillages in confined areas.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Fluid
Color	Colorless.
Odor	Like Chlorine.
Melting point	-57.2°C
Initial boiling point and range	116°C (DIN 51751)
Flash point	28°C (DIN 51755)
Vapor pressure	16 hPa
Density	1.18 g/m ³
Solubility(ies)	60 g/l @20°C
Auto-ignition temperature	385°C (DIN 51794)
Viscosity	Not determined.
Explosive properties	Not considered to be explosive.

EPICHLOROHYDRIN

Organic solvents	0.0%
VOC (EC)	0,00%
VOC (CH)	0,00%

10. Stability and reactivity

Reactivity	No information available.
Stability	Avoid the following conditions: Heat, sparks, flames. Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	No information available.
Materials to avoid	Keep away from heat, sparks and open flame. Avoid contact with strong oxidizing agents. The following materials may react strongly with the product: Strong acids. Strong alkalis. Amines. Aluminum.
Hazardous decomposition products	Carbon monoxide (CO). Carbon dioxide (CO ₂). Hydrogen chloride (HCl). Phosgene (COCl ₂).

11. Toxicological information

Information on toxicological effects

Toxicological effects Very toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 175 mg/kg, Oral, Rat

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ 515 mg/kg, Oral, Rabbit

ATE dermal (mg/kg) 300.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ 4114 mg/l, Inhalation, Rat

ATE inhalation (vapours mg/l) 3.0

Skin corrosion/irritation

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/irritation

Serious eye damage/irritation Causes severe skin burns and eye damage.

Respiratory sensitization

Respiratory sensitization Toxic if inhaled.

Skin sensitization

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

EPICHLOROHYDRIN

Carcinogenicity

Carcinogenicity May cause cancer.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

12. Ecological Information

General Notes Avoid the spillage or runoff entering drains, sewers or watercourses.

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 23.9 mg/l, Daphnia magna

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bio-Accumulative Potential No information available.

Mobility in soil

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

General information Dispose of waste via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Remove contamination with soap and water or recognized skin cleansing agent.

Disposal methods Dispose of waste product or used containers in accordance with local regulations

14. Transport information

UN Number

UN No. (IMDG) 2023

UN No. (ICAO) 2023

UN proper shipping name

Proper shipping name (IMDG) EPICHLOROHYDRIN

Proper shipping name (ICAO) EPICHLOROHYDRIN

Transport hazard class(es)

EPICHLOROHYDRIN

IMDG Class 6.1

IMDG subsidiary risk 3

ICAO class/division 6.1

ICAO subsidiary risk 3

Transport labels



Packing group

IMDG packing group II

ICAO packing group II

Environmental hazards

Environmentally Hazardous Substance



Special precautions for user

EmS F-E, S-D

Stowage Category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

ADR and IMDG:

Excepted quantities (EQ): E4

Limited quantities (LQ) 100 ml

Maximum net quantity per inner packaging: 1 ml

Maximum net quantity per outer packaging: 500 ml

Transport Category: 2

Tunnel Restriction Code: D/E

UN "Model Regulation": UN 2023 EPICHLOROHYDRIN, 6.1 (3), II

15. Regulatory information

16. Other information

EPICHLOROHYDRIN

Abbreviations and acronyms used in the safety data sheet

IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association"(IATA).
ICAO: International Civil Aviation Organisation

EINECS: European Inventory of Existing Commercial and Chemical Substances

VOC: Volatile Organic Compounds (USA,EU)

Skin Corr. = Skin corrosion
Eye Dam. = Serious eye damage
Aquatic Acute = Hazardous to the aquatic environment (acute)
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Skin Sens.1: Sensitisation- Skin, Hazard Category 1
Carc. 1B: Carcinogenicity – Category 1B

Revision date 11/1/2018
Revision 01
Supersedes date 8/7/2018
SDS No. 4593

Hazard statements in full H226 Flammable liquid and vapor.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H350 May cause cancer.

Disclaimer This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.