



SAFETY DATA SHEET
EPICHLOROHYDRIN
 According to OSHA HCS

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

1.1. Product identifier

Product name	EPICHLOROHYDRIN
REACH registration number	01-2119457436-33-0021
CAS number	106-89-8
EU index number	603-026-00-6
EC number	203-439-8

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	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

1.3. Details of the supplier of the safety data sheet

EPICHLOROHYDRIN

Manufacturer Jubail Chemical Industries Company (JANA)
 P.O.BOX - 11919
 Jubail Industrial City - 31961
 Saudi Arabia
 Tel. +966 13 3478888 ext 351
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 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

1.4. Emergency telephone number

Emergency telephone JANA
 Tel. +966 509058826
 Tel. +966 501580466

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

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

2.2. Label elements

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

EC number 203-439-8

Pictogram



Signal word Danger

Hazard-determining components of labelling 1-chloro-2,3-epoxypropane

Hazard statements 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.

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Precautionary statements	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.</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>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
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2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	EPICHLOROHYDRIN
REACH registration number	01-2119457436-33-0021
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SECTION 4: First aid measures

4.1. 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 person to fresh air and keep 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.

4.2. Most important symptoms and effects, both acute and delayed

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.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	No information available.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray, dry powder or carbon dioxide. Alcohol-resistant foam.
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5.2. Special hazards arising from the substance or mixture

Specific hazards	No information available.
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5.3. Advice for firefighters

Special protective equipment for firefighters	Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.
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SECTION 6: Accidental release measures

6.1. 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.

6.2. Environmental precautions

Environmental precautions Flush contaminated area with plenty of water.

6.3. 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.

6.4. Reference to other sections

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.

SECTION 7: Handling and storage

7.1. 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.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions No special storage precautions required.

Storage class Keep container tightly sealed when not in use.

7.3. Specific end use(s)

Specific end use(s) No information available.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

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

DNEL Workers - Oral, Inhalation; Acute : 1.52 mg/m³
- Inhalation, Oral; Long term : 1.52 mg/m³

PNEC General population - Fresh water; 0.0106 mg/l
- Sediment (Freshwater); 0.0572 mg/kg/dwt
- Marine water; 0.00106 mg/l
- Sediment (Marinewater); 0.00572 mg/kg/dwt
- STP; 35 mg/l

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

8.2. Exposure controls

Protective equipment



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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.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Fluid
Colour	Colourless.
Odour	Like Chlorine.
Melting point	-57.2°C
Initial boiling point and range	116°C (DIN 51751)
Flash point	28°C (DIN 51755)
Vapour 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.
Organic solvents	0.0%
VOC (EC)	0,00%
VOC (CH)	0,00%

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

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Stability Avoid the following conditions: Heat, sparks, flames. Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid No information available.

10.5. Incompatible materials

Materials to avoid Keep away from heat, sparks and open flame. Avoid contact with strong oxidising agents. The following materials may react strongly with the product: Strong acids. Strong alkalis. Amines. Aluminium.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen chloride (HCl). Phosgene (COCl₂).

SECTION 11: Toxicological information

11.1. 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 sensitisation

Respiratory sensitisation Toxic if inhaled.

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

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

Carcinogenicity

Carcinogenicity May cause cancer.

Reproductive toxicity

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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.

SECTION 12: Ecological Information

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

12.1. Toxicity

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

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulative potential No information available.

12.4. Mobility in soil

Mobility No information available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment Not applicable.

12.6. Other adverse effects

Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1. 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, labelled with their contents. Remove contamination with soap and water or recognised skin cleansing agent.

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

European waste catalogue: 07 01 04*: other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2023

UN No. (IMDG) 2023

UN No. (ICAO) 2023

14.2. UN proper shipping name

EPICHLOROHYDRIN

Proper shipping name (ADR/RID) UN2023 EPICHLOROHYDRIN

Proper shipping name (IMDG) EPICHLOROHYDRIN

Proper shipping name (ICAO) EPICHLOROHYDRIN

14.3. Transport hazard class(es)

ADR/RID class 6.1

ADR/RID subsidiary risk 3

ADR/RID classification code TF1

ADR/RID label 6.1

IMDG class 6.1

IMDG subsidiary risk 3

ICAO class/division 6.1

ICAO subsidiary risk 3

ADN class 6.1

ADN subsidiary risk 3

Transport labels



14.4. Packing group

ADR/RID packing group II

IMDG packing group II

ICAO packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS F-E, S-D

Stowage Category A

ADR transport category 2

Emergency Action Code •3W

Hazard Identification Number (ADR/RID) 63

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

EPICHLOROHYDRIN

Abbreviations and acronyms used in the safety data sheet	<p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association"(IATA).</p> <p>ICAO: International Civil Aviation Organisation</p> <p>ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.</p> <p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>IATA: International Air Transport Association.</p> <p>GHS: Globally Harmonized System.</p> <p>EINECS: European Inventory of Existing Commercial and Chemical Substances</p> <p>CAS: Chemical Abstracts Service.</p> <p>VOC: Volatile Organic Compounds (USA,EU)</p> <p>DNEL: Derived No Effect Level.</p> <p>PNEC: Predicted No Effect Concentration.</p> <p>LC₅₀: Lethal Concentration to 50 % of a test population.</p> <p>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p> <p>Skin Corr. = Skin corrosion</p> <p>Eye Dam. = Serious eye damage</p> <p>Aquatic Acute = Hazardous to the aquatic environment (acute)</p> <p>Flam. Liq. 3: Flammable liquids – Category 3</p> <p>Acute Tox. 3: Acute toxicity – Category 3</p> <p>Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B</p> <p>Skin Sens.1: Sensitisation- Skin, Hazard Category 1</p> <p>Carc. 1B: Carcinogenicity – Category 1B</p>
Revision date	07/08/2018
Revision	00
SDS number	4593
Hazard statements in full	<p>H226 Flammable liquid and vapour.</p> <p>H301 Toxic if swallowed.</p> <p>H311 Toxic in contact with skin.</p> <p>H314 Causes severe skin burns and eye damage.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H318 Causes serious eye damage.</p> <p>H331 Toxic if inhaled.</p> <p>H350 May cause cancer.</p>
Disclaimer	<p>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.</p>