Material Safety Data Sheet

EPICHLOROHYDRIN (RXSOL-19-1165-035)

1. Product and Company Identifaction

Porduct Name	EPICHLOROHYDRIN
Part Number	RXSOL-19-1165-035

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Branch : Kandla, Mumbai , Chennai, Vizag, Kolkata, UAE, OMAN , CANADA and KENYA

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2. Composition / informationon ingredients

Product name	Cas No	EC No	Weight	Formula
Epichlorohydrine	106-89-8	203-439-8	92,53 g/mol	C_3H_5ClO

3. Hazards Identification

Signal Word	Danger
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.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. 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. 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
Classification of the substance or mixture	No data available
Supplemental Hazard Statements	No data available
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. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

4. First Aid Measures

General advice	First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance
If inhaled	After inhalation: fresh air. Immediately call in physician. If breathing stops immediately apply artificial respiration, if necessary also oxygen.
Eye Contact	After eye contact rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
Swallowed	Give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Skin Contact	In case of skin contact Take off immediately all contaminated clothing. Rinse skin with water/ shower
Inhalation	No data available
Ingestion	No data available
Most important symptoms and effects, both acute and delaye	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Indication of any immediate medical attention and special treatment needed	No data available

5. Fire-fighting Measures

Flammability	No data available
Suitable extinguishing media	Small (incipient) fires must be extinguished with alcohol resistant foam, dry chemical powder or carbon dioxide. Large amounts of water are ineffective. Cool containers with large amounts of water.
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.
Special hazards arising from the substance or mixture	Carbon oxides Hydrogen chloride gas Combustible. Fire may cause evolution of: Hydrogen chloride gas, Phosgene, dioxin Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire
Further information	Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Hazardous combustion products	No data available
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Protective Equipment	No data available
Specific Hazards Arising from the Chemical	No data available

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Spillage	No data available
Personal Protection	No data available
Enviromental Precaution	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.
Reference to other sections	For disposal see section 13.

7. Handling and Storage

Advice on protection against fire and explosion	Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.
Incompatible materials	No data available
Hygiene measures	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Advice on safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols
Conditions for safe storage including any incompatibilities	No data available
Storage conditions	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons. Recommended storage temperature see product label.
Storage class	Storage class (TRGS 510) 3 Flammable liquids

Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
Advice on general occupational hygiene	No data available

8. Exposure controls and personal protection

Exposure controls	Personal protective equipment
Engineering Control	No data available
Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Body Protection	Flame retardant antistatic protective clothing.
Skin protection	This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: butyl-rubber Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested:Butoject® (KCL 898) This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Viton® Minimum layer thickness: 0,7 mm Break through time: 60 min Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)
Respiratory protection	Recommended Filter type Filter A-(P3) The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Other Protection Measure	No data available

9. Physical and chemical properties

Physical state	Liquid
Colour	Colorless
Odour	Stinging
Odor Threshold	No data available
pH	14 at 100 g/l at 20 °C
Melting Point	-57 °C at 1.013 hPa
Boiling Point	117 °C at 1.013 hPa
Flash Point	28 °C - DIN 51755 Part 1
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data Available
Upper/lower flammability or explosive limits	Upper explosion limit 21 %(V) Lower explosion limit 3,8 %(V)
Autoignition temperature	385 °C at 1.013 hPa
Decomposition temperature	225 °C
Vapour pressure	16,5 hPa at 20 °C 22,8 hPa at 25 °C
Viscosity	Dynamic: ca.1,03 mPa.s at 20 °C
Density	1,18 g/cm3 at 20 °C
Relative Density	1,18 at 20 °C
Specific Gravity	No data available
Partition coefficient	Log Pow 0,45 at 25 °C - Bioaccumulation is not expected.
Explosive properties	No data available
Solubility	ca.65,9 g/l at 25 °C - completely soluble
Ignition temperature	No data available
Particle characteristics	No data available

10. Stability and reactivity

Reactivity	Vapor/air-mixtures are explosive at intense warming.
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature)
Possibilityof hazardous reactions	aluminium chloride Amines anilines metallic chlorides Chlorites Tin Zinc Exothermic reaction with: Alkali metals Alcohols alkalines Water Zinc Tin acids Ethyleneimine aromatic amines Nitric acid sulfuric acid trichloroethene
Conditions to avoid	Heat, flames and sparks. Heating.
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

11. Toxicological information

Acute toxicity	LD50 Oral - Rat - female - 175 mg/kg (US-EPA) LC50 Inhalation - Rat - female - 4 h - 2,05 mg/l - vapor (ECHA) LD50 Dermal - Rabbit - male and female - 515 mg/kg Remarks: (ECHA)
Skin corrosion/irritation	Skin - Rabbit Corrosive (Draize Test) (Regulation (EC) No 1272/2008, Annex VI) Skin - Rabbit Open irritation test - 24 h
Serious eye damage/irritation	Eyes - Rabbit Corrosive - 24 h (ECHA) Causes serious eye damage
Respiratory or skin sensitization	Maximization Test - Guinea pig positive (OECD Test Guideline 406) May cause sensitization by skin contact.
Carcinogenicity	Presumed to have carcinogenic potential for humans
Germ cell mutagenicity	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test Metabolic activation: without metabolic activation Method: OECD Test Guideline 476 Result: positive Test Type: Mutagenicity (mammal cell test): chromosome aberration. Species: Mouse Cell type: Bone marrow Application Route: Oral Method: OECD Test Guideline 475 Result: positive Test Type: Mutagenicity (mammal cell test): chromosome aberration. Species: RatCell type: Bone marrow Application Route: inhalation (vapor) Method: OECD Test Guideline 475 Result: Positive results were obtained in some in vivo tests.
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Additional Information	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 1 mg/kg Remarks: Subchronic toxicity Repeated dose toxicity - Rat - male and female - Inhalation - 88 d Remarks: Subchronic toxicity Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological information

Persistence and degradability	Biodegradability aerobic - Exposure time 14 d Result: 92,5 % - Readily biodegradable. (OECD Test Guideline 301C) Remarks: (in analogy to similar products) The value is given in analogy to the following substances: 3-chloro1,2-propanediol
Toxicity to fish	Static test LC50 - Pimephales promelas (fathead minnow) - 10,6 - 13,2 mg/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - 24 mg/l - 48 h Remarks: (ECHA)
Toxicity	No data available
Toxicity to bacteria	Static test NOEC - microorganisms - 35 mg/l - 72 h Remarks: (ECHA
Toxicity to algae	Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 15 mg/l - 72 h (OECD Test Guideline 201)
Products Biodegradation	No data available
Mobility in soil	No data availalble
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.

Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher
Other adverse effects	No data availalble

13. Disposal considerations

Product	No data available
Contaminated packaging	No data available
Waste treatment Method	No data available

14. Transport information

UN number	ADR/RID:2023	IMDG:2023	IATA:2023
UN proper shipping name	ADR/RID:EPICHLOROHYDRIN	IMDG:EPICHLOROHYDRIN	IATA:EPICHLOROHYDRIN
Transport hazard class(es)	ADR/RID:6.1 (3)	IMDG:6.1 (3)	IATA:6.1 (3)
Packaging group	ADR/RID:II	IMDG:II	IATA:II
Environmental hazards	ADR/RID:Yes	IMDG:Yes	IATA:No
Special precautions for user	Tunnel restriction code (D/E)		
Further information	No data available		

15. Regulatory information

Safety,health and environmental regulations/legislation specific for the substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Other regulations	Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.
Chemical Safety Assessment	A Chemical Safety Assessment was not carried out for this substance.

16. Other information

Other Information	The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and weassume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Rx Marine International has been advised of the possibility of such damages. DISCLAIMER OF LIABILITY :The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.