

SAFETY DATA SHEETS

According to the UN GHS revision 10

Version: 1.1
Creation Date: July 15, 2024
Revision Date: January 06, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Epichlorohydrin Impurity 8

1.2 Other means of identification

Product number C4X-25538

Other names 1,2:6,7-diepoxy-4-oxaheptane; Oxirane, 2,2'-(oxybis(methylene))bis-; Ether,diglycidyl

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Acute toxicity - Category 3, Dermal

Skin corrosion, Sub-category 1B

Acute toxicity - Category 2, Inhalation

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H302 Harmful if swallowed

H311 Toxic in contact with skin

H314 Causes severe skin burns and eye damage

H330 Fatal if inhaled

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P284 [In case of inadequate ventilation] wear respiratory protection.

Response	P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P363 Wash contaminated clothing before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P320 Specific treatment is urgent (see ... on this label).
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Epichlorohydrin Impurity 8	2,2'-(oxybis(methylene))bisoxirane	2238-07-5	218-802-6	≈ 99%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

This compound can cause death or permanent injury via oral and inhalation routes during exposure that comes from normal use. It is incapacitating and poisonous and requires special handling. It can cause considerable discomfort by the dermal route. (EPA, 1998)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Provide a low-stimulus environment. Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Treat frostbite by rapid rewarming . Ethers and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Dry chemical, carbon dioxide, alcohol foam.

5.2 Specific hazards arising from the chemical

Non-Specific -- Poison, Flammable Liquid, n.o.s.) May be ignited by heat, sparks, or flames. Container may explode in heat of fire. Vapor explosion and poison hazard indoors, outdoors or in sewers. Avoid strong oxidizers. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water.

6.2 Environmental precautions

Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water.

6.3 Methods and materials for containment and cleaning up

Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Above 64°C use a closed system, ventilation and explosion-proof electrical equipment. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants. Ventilation along the floor. Separated from strong oxidants. Ventilation along the floor.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.01 ppm as TWA; A4 (not classifiable as a human carcinogen). MAK: skin absorption (H); carcinogen category: 3B

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Diglycidyl ether is a colorless liquid with a pronounced irritating odor. Used as a reactive diluent for epoxy resin, as a chemical intermediate, as a stabilizer of chlorinated organic compounds, and as a textile-treating agent. (EPA, 1998)
Colour	Colorless liquid
Odour	Strong, irritating odor
Melting point/freezing point	-->
Boiling point or initial boiling point and boiling range	218.6°C at 760mmHg
Flammability	Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
Lower and upper explosion limit/flammability limit	Combustible
Flash point	70.6°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water, 4.9X10+5 mg/L at 25 deg C (est)
Partition coefficient n-octanol/water	log Kow = -0.85 (est)
Vapour pressure	0.184mmHg at 25°C
Density and/or relative density	1.199g/cm3
Relative vapour density	3.78 at 77° F SUSPECT (EPA, 1998) (Relative to Air)

Particle characteristics

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

10 ppm; NIOSH has recommended that diglycidyl ether be treated as a potential human carcinogen. The substance can presumably form explosive peroxides. May explode on heating. Reacts with strong oxidants.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Epoxides, such as DIGLYCIDYL ETHER, are highly reactive. They polymerize in the presence of catalysts or when heated. These polymerization reactions can be violent. Compounds in this group react with acids, bases, and oxidizing and reducing agents. They react, possibly violently with water in the presence of acid and other catalysts.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizers.

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 450 mg/kg (10% in propylene glycol) from table
- Inhalation: LC50 Rabbit inhalation 13.3 ppm/24 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

A4; Not classifiable as a human carcinogen.

Reproductive toxicity

no data available

STOT-single exposure

The substance is severely irritating to the eyes, skin and respiratory tract. Inhalation of the vapour may cause lung oedema. See Notes. The substance may cause effects on the blood, kidneys, liver and testes. Exposure could cause lowering of consciousness. Medical observation is indicated.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged contact may cause skin sensitization. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for diglycidyl ether (SRC), using an estimated log Kow of -0.85(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of diglycidyl ether can be estimated to be 1(SRC). According to a classification scheme(2), this estimated Koc value suggests that diglycidyl ether is expected to have very high mobility in soil.

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN2922 (For reference only, please check.) IMDG: UN2922 (For reference only, please check.) IATA: UN2922 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: CORROSIVE LIQUID, TOXIC, N.O.S. (For reference only, please check.) IMDG: CORROSIVE LIQUID, TOXIC, N.O.S. (For reference only, please check.) IATA: CORROSIVE LIQUID, TOXIC, N.O.S. (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.) IMDG: 8 (For reference only, please check.) IATA: 8 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.) IMDG: I (For reference only, please check.) IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
2,2'-[oxybis(methylene)]bisoxirane	2,2'-[oxybis(methylene)]bisoxirane	2238-07-5	218-802-6
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2024
Revision Date	January 06, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

The auto-ignition temperature is unknown in the literature. Explosive limits are unknown in the literature. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered. The odour warning when the exposure limit value is exceeded is insufficient. Check for peroxides prior to distillation; eliminate if found.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.