

## Chemical Safety Data Sheet MSDS / SDS

## 2,3-epoxypropyl phenyl ether SDS

Revision Date:2024-04-25 Revision Number:1

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

Product name: 2,3-epoxypropyl phenyl ether

CAS: 122-60-1

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Skin irritation, Category 2

Skin sensitization, Category 1

Acute toxicity - Category 4, Inhalation  
Specific target organ toxicity - single exposure, Category 3  
Germ cell mutagenicity, Category 2  
Carcinogenicity, Category 1B  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H315 Causes skin irritation  
H317 May cause an allergic skin reaction  
H332 Harmful if inhaled  
H335 May cause respiratory irritation  
H341 Suspected of causing genetic defects  
H350 May cause cancer  
H412 Harmful to aquatic life with long lasting effects

### Precautionary statement(s)

### Prevention

P264 Wash ... thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P271 Use only outdoors or in a well-ventilated area.  
P203 Obtain, read and follow all safety instructions before use.  
P273 Avoid release to the environment.

### Response

P302+P352 IF ON SKIN: Wash with plenty of water/...  
P321 Specific treatment (see ... on this label).  
P332+P317 If skin irritation occurs: Get medical help.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P333+P317 If skin irritation or rash occurs: Get medical help.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P317 Get medical help.  
P319 Get medical help if you feel unwell.  
P318 IF exposed or concerned, get medical advice.

#### **Storage**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

#### **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.

#### **Other hazards which do not result in classification**

no data available

### **SECTION 3: Composition/information on ingredients**

#### **Substance**

Chemical name:	2,3-epoxypropyl phenyl ether
Common names and synonyms:	2,3-epoxypropyl phenyl ether
CAS number:	122-60-1
EC number:	204-557-2
Concentration:	100%

### **SECTION 4: First aid measures**

#### **Description of necessary first-aid measures**

#### **If inhaled**

Fresh air, rest.

#### **Following skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### **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.

#### **Most important symptoms/effects, acute and delayed**

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin; upper respiratory system; skin sensitization; narcosis; possible hematopoietic, reproductive effects; [potential occupational carcinogen] Target Organs: Eyes, skin, central nervous system, hematopoietic system, reproductive system (NIOSH, 2016)

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

#### **Absorption, Distribution and Excretion**

Phenyl glycidyl ether percutaneous absorption rates were 13.5 mg/sq cm/hr in rats & 4.2 mg/sq cm/hr for rabbits.

### **SECTION 5: Firefighting measures**

#### **Suitable extinguishing media**

Dry chemical, carbon dioxide, or alcohol foam.

#### **Specific hazards arising from the chemical**

This chemical is probably combustible. (NTP, 1992)

#### **Special protective actions for fire-fighters**

Use water spray, foam, powder, carbon dioxide.

### **SECTION 6: Accidental release measures**

#### **Personal precautions, protective equipment and emergency procedures**

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the

environment. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

#### **Environmental precautions**

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

#### **Methods and materials for containment and cleaning up**

Do NOT let this chemical enter the environment. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.

### **SECTION 7: Handling and storage**

#### **Precautions for safe handling**

NO open flames. 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.

#### **Conditions for safe storage, including any incompatibilities**

Store in an area without drain or sewer access. Separated from strong oxidants, strong bases, strong acids and amines. Cool. Keep in the dark. Store in an area without drain or sewer access. Separated from strong oxidants, strong bases, strong acids and amines. Cool. Keep in the dark.

### **SECTION 8: Exposure controls/personal protection**

#### **Control parameters**

#### **Occupational Exposure limit values**

TLV: 0.1 ppm as TWA; (skin); (SEN); A3 (confirmed animal carcinogen with unknown relevance to humans).MAK: skin absorption (H); sensitization of skin (SH); carcinogen category: 2

#### **Biological limit values**

no data available

### 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.

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

#### Eye/face protection

Wear safety goggles 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:	Liquid.
Colour:	Colorless.
Odour:	no data available
Melting point/freezing point:	3.5 °C.
Boiling point or initial boiling point and boiling range:	245 °C.
Flammability:	Class IIIB Combustible Liquid: Fl.P. at or above 200°F.
Lower and upper explosion limit/flammability limit:	Combustible

Flash point:	120 °C.
Auto-ignition temperature:	430 °C.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	1 to 5 mg/mL at 64° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 1.61. Temperature:25 °C.
Vapour pressure:	0.013 hPa. Temperature:25 °C.
Density and/or relative density:	1.111. Temperature:21 °C.
Relative vapour density:	5.2 (vs air)
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

100 ppm; NIOSH considers phenyl glycidyl ether to be a potential occupational carcinogen. The substance can presumably form explosive peroxides. The substance polymerizes under the influence of acids, bases and amines. Reacts violently with strong oxidants. This generates fire and explosion hazard.

### Chemical stability

no data available

### Possibility of hazardous reactions

PHENYL GLYCIDYL ETHER, an ether, can act as a base. They form salts with strong acids and addition complexes with Lewis acids.

The complex between diethyl ether and boron trifluoride is an example. Ethers may react violently with strong oxidizing agents. In other reactions, which typically involve the breaking of the carbon-oxygen bond, ethers are relatively inert.

#### **Conditions to avoid**

no data available

#### **Incompatible materials**

Incompatibilities: Contact with strong oxidizing agents may cause fires and explosions. Contact with amines, strong acids, and strong bases may cause polymerization with the liberation of heat and spattering. Exposure to light and air may result in the formation of explosive peroxides.

#### **Hazardous decomposition products**

Energy of decomposition (in range 360-450 deg C) measured as 0.626 kJ/g.

### **SECTION 11: Toxicological information**

#### **Acute toxicity**

Oral: LD50 - rat - 4 260 mg/kg bw.

Inhalation: LC100 - rat (male) - 323 ppm.

Dermal: LD50 - rabbit (male) - 1 666 mg/kg bw.

#### **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**

Evaluation: No epidemiological data relevant to the carcinogenicity of phenyl glycidyl ether were available. There is sufficient evidence in experimental animals for the carcinogenicity of phenyl glycidyl ether. Overall evaluation: Phenyl glycidyl ether is possibly carcinogenic to humans (Group 2B).

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract.

### **STOT-repeated exposure**

Repeated or prolonged contact may cause skin sensitization. This substance is possibly carcinogenic to humans.

### **Aspiration hazard**

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: LC50 - *Carassius auratus* - 43 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **Persistence and degradability**

AEROBIC: A 5-day theoretical BOD of 6% was measured for phenyl glycidyl ether using a standard dilution method and an effluent from a biological sanitary waste treatment plant as the inoculum(1). A 5-day theoretical BOD of 0% was measured using a BOD

dilution method and an acclimated sewage inoculum(2). Phenyl glycidyl ether, present at 100 mg/L, reached 33% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MITI test(3).

#### **Bioaccumulative potential**

An estimated BCF of 8 was calculated for phenyl glycidyl ether(SRC), using a water solubility of 2,400 mg/L(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(SRC).

#### **Mobility in soil**

The Koc of phenyl glycidyl ether is estimated as 60(SRC), using a water solubility of 2,400 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that phenyl glycidyl ether is expected to have high mobility in soil.

#### **Other adverse effects**

no data available

### **SECTION 13: Disposal considerations**

#### **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**

#### **UN Number**

ADR/RID: Not dangerous goods. (For reference only, please check.)  
IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### **UN Proper Shipping Name**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### **Transport hazard class(es)**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### **Packing group, if applicable**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

#### **Special precautions for user**

no data available

#### **Transport in bulk according to IMO instruments**

no data available

### **SECTION 15: Regulatory information**

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

**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.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

**SECTION 16: Other information**

**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](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

Do NOT take working clothes home. Check for peroxides prior to distillation; eliminate if found.

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