

**MATERIAL SAFETY DATA SHEET**  
**ETHYL (2R,3R)-2,3-EPOXY-3-METHYLPROPANOATE 96%**

**Section 1 - Chemical Product and Company Identification**

<b>MSDS Name:</b>	ETHYL (2R,3R)-2,3-EPOXY-3-METHYLPROPANOATE 96%
<b>Catalog Numbers:</b>	69.39
<b>Synonyms:</b>	(-)-Ethyl (2R,3R)-3-methyl-2-oxiranecarboxylate
<b>Company Identification:</b>	Tau-Chem, Ltd. Nobelova 34, P.O. Box 29 836 05 Bratislava, Slovak Republic Phone: +421 2 44 452 252 Fax: +421 2 44 457 645
Relevant identified uses of substance or mixture and uses advised against	
Identified uses	Laboratory chemicals, Manufacture of substances
<b>POISON CENTER:</b>	National Toxicological Information Centre Limbová 5, 833 05 Bratislava,
<b>Emergency Numbers Slovakia:</b>	Phone: +421 2 54 774 166 Fax: +421 2 54 774 605

**Section 2 - Hazards Identification**

**Classification of the substance or mixture**

**Labeling according to Regulation (EC) No 1272/2008 [CLP]**

Flammable liquids (Category 3)

Acute toxicity (Category 4)

**According to European Directive 67/548/EEC as amended.**

Flammable liquid.

**Label elements**

Pictogram



Signal word

Warning

Hazard statement(s)

H226

Flammable liquid and vapour.

H302

Harmful if swallowed.

Precautionary statement(s)

P301+P312

IF **SWALLOWED**: Call a **POISON CENTER** or doctor/physician if you feel unwell.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard symbol(s)**

**According to European Directive 67/548/EEC as amended**

F, Xn



R-phrases(s)

R10

Flammable.

R22

Harmful if swallowed.

S-phrases(s)

S26

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37

Wear suitable gloves.

**Other hazards**

None.

### Section 3 – Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
19780-35-9	ETHYL (2R,3R)-2,3-EPOXY-3-METHYLPROPANOATE	96	243-300-9

**Classification** Flam. Liq. 3; Acute Tox. 4  
H226, H302  
F, Xn, R10-R22

For the full text of the H-Statements mentioned in this Section, see Section 16.

### Section 4 – First Aid Measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled:** If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

**In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.

**In case eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### Section 5 – Fire Fighting Measures

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>), dry powder or water jet. For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray;

**Advice for firefighters** Wear self contained breathing apparatus for fire fighting if necessary.

**Special protective equipment for** Wear self contained breathing apparatus for fire fighting if

**fire-fighters:**  
**Further information**

necessary.  
Use water spray to cool unopened containers.

## Section 6 – Accidental Release Measures

<b>Personal precautions:</b>	Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
<b>Environmental precautions:</b>	Prevent further leakage or spillage if safe to do. Do not let product enter drains.
<b>Methods and materials for containment and cleaning up</b>	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

## Section 7 – Handling and Storage

<b>Precautions for safe handling:</b>	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
<b>Conditions for safe storage:</b>	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

## Section 8 – Exposure Controls, Personal Protection

<b>Personal protective equipment:</b>	
<b>Respiratory protection:</b>	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<b>Hand protection</b>	The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.
<b>Eye protection:</b>	Face shield and safety glasses.
<b>Skin and body protection:</b>	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
<b>Hygiene measures:</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## Section 9 – Physical and Chemical Properties

<b>Appearance</b>	
Form:	Liquid
Colour:	Colourless

<b>Safety data:</b>	
<b>pH</b>	Not available
<b>Melting Point:</b>	Not available
<b>Boiling Point:</b>	77 °C / 20 mm Hg
<b>Flash Point:</b>	47 °C closed cup
<b>Ignition temperature:</b>	Not available
<b>Explosion Limits: Lower:</b>	Not available
<b>Explosion Limits: Upper:</b>	Not available
<b>Solubility in water:</b>	Not available
<b>Gravity/ Density:</b>	1.055 g/cm <sup>3</sup>
<b>Refractive index:</b>	1.4210
<b>Optical rotation:</b>	- 1.1 ± 0.1° (c=5 CH <sub>3</sub> OH)
<b>Molecular Formula:</b>	C <sub>6</sub> H <sub>10</sub> O <sub>3</sub>
<b>Molecular Weight:</b>	130.14 g/mol

### Section 10 – Stability and Reactivity

<b>Chemical Stability:</b>	Stabile under recommended storage conditions.
<b>Conditions to Avoid:</b>	Incompatible materials, ignition sources, exposure to moist air or water.
<b>Materials to avoid:</b>	Strong oxidizing agents, strong acids, strong bases.
<b>Hazardous Decomposition Products</b>	Hazardous decomposition products under fire conditions. – Carbon oxides.

### Section 11 – Toxicological Information

<b>Acute toxicity</b>	Skin - rabbit LD50: = 2830 mg/kg Oral - rat LD50: = 500 mg/kg
<b>Skin corrosion/irritation</b>	Irritant for skin and mucous membranes.
<b>Serious eye damage/eye irritation</b>	Irritant effect.
<b>Respiratory or skin sensitization</b>	No sensitizing effect known.
<b>Germ cell mutagenicity</b>	Mutagenic effects have been observed on tests with bacteria.
<b>Carcinogenicity:</b>	IARC: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>Reproductive toxicity:</b>	No data available
<b>Specific target organ toxicity – single exposure</b>	Inhalation – May cause respiratory irritation.
<b>Specific target organ toxicity – repeated exposure</b>	No data available
<b>Aspiration hazard</b>	No data available
<b>Potential health effect:</b>	
<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.

<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

#### Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

#### Additional Information

RTECS: ET0875000.

### Section 12 – Ecological Information

<b>Toxicity:</b>	No data available
<b>Persistence and degradability</b>	No data available
<b>Bioaccumulative potential</b>	No data available
<b>Mobility in soil</b>	No data available
<b>PBT and vPvB assessment</b>	No data available
<b>Other adverse effects</b>	No data available

### Section 13 – Disposal Considerations

<b>Product</b>	Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
<b>Contaminated packaging</b>	Dispose of as unused product.

### Section 14 – Transport Information

	<b>IATA</b>	<b>IMGD</b>	<b>RID/ADR</b>
<b>Shipping Name:</b>	FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.
<b>Hazard Class:</b>	3	3	3
<b>UN Number:</b>	1993	1993	1993
<b>Packing Group:</b>	III	III	III

Marine pollutant: No

### Section 15 – Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006

## Section 16 – Other Information

### Text of H-code(s) and R-phrase(s) mentioned in Section 3

Flam. Liq.	Flammable liquids.
Acute Tox.	Acute toxicity.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
F	Flammable.
Xn	Harmful
R10	Flammable.
R22	Harmful if swallowed.

**MSDS Creation Date:** 23/3/2007

**Revision #1 Date:** 15/06/2011

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Disclaimer:**

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.