

MATERIAL SAFETY DATA SHEET
1,3-BUTADIENE DIEPOXIDE 98%**Section 1 - Chemical Product and Company Identification**

MSDS Name:	1,3-BUTADIENE DIEPOXIDE 98%
Catalog Numbers:	1.16
Synonyms:	Butadiene diepoxide, 1,2,3,4-Diepoxybutane, Bioxirane
Company Identification:	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
POISON CENTER:	National Toxicological Information Centre Limbová 5, 833 05 Bratislava,
Emergency Numbers Slovakia:	Phone: +421 2 54 774 166 Fax: +421 2 54 774 605

Section 2 - Hazards Identification**Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 3)
Acute toxicity, Oral (Category 3)
Germ cell mutagenicity (Category 1B)
Carcinogenicity (Category 1B)
Skin corrosion (Category 1B)

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

May cause cancer. Possible risk of irreversible effects. Toxic in contact with skin and if swallowed.

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

Pictogram

Signal word

Danger

Hazard statement(s)

H301

Toxic if swallowed.

H311

Toxic in contact with skin

H314

Causes severe skin burns and eye damage.

H330

Fatal if inhaled.

H340	May cause genetic defects.
H350	May cause cancer.
Precautionary statement(s)	
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON <u>SKIN</u> : Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P280	Wear protective gloves/protective clothing.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation.

Hazard symbol(s)

According to European Directive 67/548/EEC as amended



T+	Very toxic.
C	Corrosive.
R-phrases(s)	
R45	May cause cancer.
R46	May cause heritable genetic damage.
R24/25	Toxic in contact with skin and if swallowed.
R26	Very toxic by inhalation.
R34	Causes burns.
S-phrases(s)	
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S45	In case of accident or if you feel unwell, seek medical advice immediately. (Show the label where possible)
S53	Avoid exposure – obtain special instructions before use.

Restricted to professional users.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
1464-53-5	1,3-BUTADIENE DIEPOXIDE	98	215-979-1

Classification Acute Tox. 2; Acute Tox. 3; Muta. 1B; Carc. 1B; Skin Corr. 1B
H301, H311, H314, H330; H340; H350
T+,C, R45-R46-R34-R24/25-R26

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:	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; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment for fire-fighters:	Wear self contained apparatus breathing apparatus for fire fighting if necessary.
Further information:	Use water spray to cool unopened containers.

Section 6 - Accidental Release Measures

Personal precautions:	Avoid breathing vapors, mist or gas. Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe area.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up	Contain spillage, and then collect with absorbent material, and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

Section 7 - Handling and Storage

Precautions for safe handling:	Avoid exposure – obtain special instructions before use. Avoid inhalation or vapor or mist. Normal measures for preventive fire protection.
Conditions for safe storage:	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

Personal protective equipment:	
Respiratory protection:	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).

Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Eye protection:	Safety glasses with side-shields conforming to EN 166. Use equipment for eye protection tested and approved under appropriate government standards as NIOSH (US) or EN 166 (EU)
Body protection:	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures:	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

Appearance

Form:	Clear liquid
Color:	Colorless

Safety data:

pH	Not available
Boiling Point:	56 - 58 °C /25 mm Hg
Vapor pressure:	3.9 mm Hg / 20 °C
Freezing/Melting Point:	2 - 4 °C
Flash Point:	45 °C closed cup
Ignition temperature:	Not available
Explosion Limits: Lower:	Not available
Explosion Limits: Upper:	Not available
Solubility in water:	Miscible
Density:	1.113 g/cm ³
Refractive Index:	1.4325 – 1.4345
Molecular Formula:	C ₄ H ₆ O ₂
Molecular Weight:	86.09 g/mol

Section 10 - Stability and Reactivity

Chemical Stability:	Stabile under recommended storage conditions.
Conditions to Avoid:	No data available.
Materials to avoid:	Strong oxidizing agents, strong acids, strong bases.
Hazardous Decomposition Products	Hazardous decomposition products under fire conditions. – Carbon oxides.

Section 11 - Toxicological Information

Acute toxicity

	Draize test, rabbit, eye: 3 ppm/3D; Draize test, rabbit, skin: 5 mg/24H Severe; Inhalation, rat: LC50 = 90 ppm/4H; Oral, mouse: LD50 = 72 mg/kg; Oral, rat: LD50 = 78 mg/kg; Skin, rabbit: LD50 = 89 uL/kg;
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	Ames-test: positive.
Carcinogenicity:	Possible human carcinogen.
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.	

Reproductive toxicity:	No data available
Specific target organ toxicity – single exposure	No data available
Specific target organ toxicity – repeated exposure	No data available
Aspiration hazard	No data available
Potential health effect:	
Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Toxic if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation

Signs and Symptoms of Exposure

Skin contact may provoke the following symptoms: irritation, skin contact poisoning. Contact with eyes can cause: Eye irritation. Inhalation of vapors can cause: Local irritation.

Additional Information

RTECS: EJ8225000

Section 12 – Ecological Information

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

Section 13 - Disposal Considerations

Product	Material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging	Dispose of as unused product.

Section 14 - Transport Information

	IATA	IMDG	RID/ADR
Shipping Name:	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
Hazard Class:	6.1 (3)	6.1 (3)	6.1 (3)
UN Number:	2929	2929	2929
Packing Group:	II	II	II
		EMS No: F-E; S-D 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) nad R-phrase(s) mentioned in Section 3

Acute Tox.	Acute toxicity.
Carc.	Carcinogenicity.
Skin Corr.	Skin corrosion.
H301	Toxic if swallowed.
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
Muta	Germ cell mutagenicity.
T	Toxic.
C	Corrosive.
R45	May cause cancer.
R46	May cause heritable genetic damage.
R24/25	Toxic in contact with skin and if swallowed.
R26	Very toxic by inhalation.
R34	Causes burns.

MSDS Creation Date: 23/4/2007

Revision #1 Date: 11/6/2010

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.