

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

**Chemical Name** (+/-)-1,2-Propylene-d6 Oxide

**Catalogue #** P835242

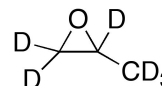
### 1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

**Product Uses** To be used only for scientific research and development. Not for use in humans or animals.

### 1.3 Details of the Supplier of the Safety Data Sheet

**Company** Toronto Research Chemicals  
2 Brisbane Road  
Toronto, ON M3J 2J8  
CANADA

**Telephone** +14166659696  
**FAX** +14166654439  
**Email** orders@trc-canada.com



### 1.4 Emergency Telephone Number

**Emergency#** +1(416) 665-9696 between 0800-1700 (GMT-5)

## 2. HAZARDS IDENTIFICATION

### 2.1/2.2 Classification of the Substance or Mixture and Label Elements

#### GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Flammable Liquids (Category 1)

Carcinogenicity (Category 2)

Germ Cell Mutagenicity (Category 1B)

Acute Toxicity, Dermal (Category 3)

Acute Toxicity, Inhalation (Category 3)

Acute Toxicity, Oral (Category 4)

Specific Target Organ Toxicity, Single Exposure; Respiratory Tract Irritation (Category 3)

Eye Damage/Irritation (Category 2A)

#### GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

**Signal Word** Danger



#### GHS Hazard Statements

H224 Extremely flammable liquid and vapour.

H351 Suspected of causing cancer.

H340 May cause genetic defects.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H302 Harmful if swallowed.

H335 May cause respiratory irritation.

H319 Causes serious eye irritation.

#### GHS Precautionary Statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233	Keep container tightly closed.
P403/P235	Store in a well-ventilated place. Keep cool.
P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P304/P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P303/P361/P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

### **2.3 Unclassified Hazards/Hazards Not Otherwise Classified**

No data available.

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **3.1 Substances**

**Molecular Formula:** C<sub>3</sub>D<sub>6</sub>O

**Molecular Weight:** 64.12

**CAS Registry #:** 202468-69-7

**EC#:**

#### **Synonyms**

Methyloxirane-d6; Oxypropylene-d6; 1,2-Epoxy-propane-d6; Propylene Oxide-d6; (±)-1,2-Epoxypropane-d6; (±)-2-Methyloxirane-d6; (±)-Epoxypropane-d6; (±)-Methyloxirane-d6; (±)-Propylene Oxide-d6; 1,2-Epoxypropane-d6; 1,2-Propylene Oxide-d6; 2,3-Epoxypropane-d6; 2-Methyloxirane-d6; AD 6-d6; AD 6 (suspending agent)-d6; DL-1,2-Epoxypropane-d6; Epiphydrin-d6; Epoxypropane-d6; Methyloxacyclopropane-d6; Methyloxirane-d6; Propene Oxide-d6; Propozone-d6; Propylene Epoxide-d6; dl-Propylene Oxide-d6

### **3.2 Mixtures**

Not a mixture.

## **4. FIRST AID MEASURES**

### **4.1 Description of First Aid Measures**

#### **General Advice**

If medical attention is required, show this safety data sheet to the doctor.

#### **If Inhaled**

If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

#### **In Case of Skin Contact**

Remove contaminated clothing and shoes. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### **In Case of Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### **If Swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

### **4.2 Most Important Symptoms and Effects, Both Acute and Delayed**

Burning sensation, Cough, Wheezing, Laryngitis, Shortness of breath, Headache, Nausea, Vomiting.

### **4.3 Indication of any Immediate Medical Attention and Special Treatment Needed**

No data available.

## **5. FIREFIGHTING MEASURES**

### **5.1 Extinguishing Media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Special Hazards Arising from the Substance or Mixture**

Carbon oxides

### 5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 Further Information

No data available.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use recommended personal protective equipment (see Section 8). Adequate ventilation must be provided to ensure vapours or mists are not inhaled. Vapours are heavier than air and may accumulate in low areas. All sources of ignition, including sources of static discharge, must be removed from area.

### 6.2 Environmental Precautions

Material should not be allowed to enter the environment. Prevent further spillage or discharge into drains, if safe to do so.

### 6.3 Methods and Materials for Containment and Cleaning Up

Contain the spill and then collect using non-combustible absorbent material (such as clay, diatomaceous earth, vermiculite or other appropriate material). Place material in a suitable, sealable container and then dispose according to local/national regulations and guidance (see Section 13).

### 6.4 Reference to Other Sections

For protective equipment, refer to Section 8. For disposal, see Section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

Avoid contact with skin and eyes. Ventilation and proper handling are to be used to prevent the formation of vapours and mists. Remove all sources of ignition and take precautionary measures to prevent the buildup of electrostatic discharge (ground and bond containers as appropriate). No smoking, eating or drinking around this material. Wash hands after use.

### 7.2 Conditions for Safe Storage, Including any Incompatibilities

Ensure container is kept securely closed before and after use. Keep in a well ventilated area and do not store with strong oxidizers or other incompatible materials (see Section 10).

Storage conditions: Refrigerator

### 7.3 Specific End Uses

For scientific research and development only. Not for use in humans or animals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control Parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
1,2-Propylene-d6 Oxide	202468-69-7	TWA	2.000000 ppm	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	2.000000 ppm	Canada. British Columbia OEL
Remarks	IARC '2B' applies to substances deemed possibly carcinogenic to humans. Sensitizer: sensitization critical effect			
		TWAEV	20.000000 ppm	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
			48.000000 mg/m3	
	A substance which may not be recirculated in accordance with section 108			
	A substance to which exposure must be reduced to a minimum in accordance with section 42			
	Carcinogenic effect suspected in humans			
		TWA	2.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)

### 8.2 Exposure Controls

#### Appropriate Engineering Controls

A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

## Personal Protective Equipment

All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

## Eye/Face Protection

Safety goggles or face shield. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

## Skin Protection

Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "chemical resistant" by EU standard EN 374 with the resistance codes corresponding to the anticipated use of the material. Unrated gloves are not recommended.

Suggested gloves: AnsellPro Sol-Vex nitrile gloves style 37-175, 15 mil thickness.

Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated "chemical resistant" as per EN 734 with the resistance codes corresponding to the anticipated use of the material.

Suggested gloves: AnsellPro Viton/Butyl gloves style 38-612, 4/8 mil thickness.

Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

## Body Protection

Chemical-resistant bodysuit (laminated Tychem SL or equivalent).

## Respiratory Protection

Recommended respirators are NIOSH-approved OV/Multi-gas/P100 or CEN-approved ABEK-FFP3 respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

#### A) Appearance

Clear Colourless Oil

#### B) Odour

No data available

#### C) Odour Threshold

No data available

#### D) pH

No data available

#### E) Melting Point/Freezing Point

N/A

#### F) Initial Boiling Point/Boiling Range

No data available

#### G) Flash point

-37 °C (-35 °F) - closed cup

#### H) Evaporation Rate

No data available

#### I) Flammability (Solid/Gas)

No data available

#### J) Upper/Lower Flammability/Explosive Limits

No data available

#### K) Vapour Pressure

No data available

#### L) Vapour Density

No data available

#### M) Relative Density

No data available

#### N) Solubility

Chloroform, Methanol

#### O) Partition Coefficient: n-octanol/water

No data available

#### P) Auto-Ignition Temperature

No data available

#### Q) Decomposition Temperature

No data available

#### R) Viscosity

No data available

#### S) Explosive Properties

No data available

#### T) Oxidizing Properties

No data available

### 9.2 Other Information

no data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available.

### 10.2 Chemical Stability

Stable under recommended storage conditions.

### 10.3 Possibility of Hazardous Reactions

Vapours may form explosive mixture with air.

### 10.4 Conditions to Avoid

Heat, flames and sparks.

### 10.5 Incompatible Materials

Strong oxidizing agents.

### 10.6 Hazardous Decomposition Products

In the event of fire: See section 5. Other decomposition products: No data available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects

#### A) Acute Toxicity

Oral LD50: Rodent - rat - 380 mg/kg

Inhalation LC50: Rodent - rat - 4000 ppm - 4 h

Dermal LD50: Rodent - rabbit - 1.5 mL/kg

#### B) Skin Corrosion/Irritation

Moderate skin/eye irritant.

#### C) Serious Eye Damage/Irritation

Moderate eye irritant.

#### D) Respiratory or Skin Sensitization

No data available

#### E) Germ Cell Mutagenicity

Possible human mutagen. Laboratory results have shown mutagenicity in several model systems.

#### F) Carcinogenicity

Evidence of a carcinogenic effect.

This compound has been designated by the IARC as Group 2B: Possibly carcinogenic to humans.

#### G) Reproductive Toxicity/Teratogenicity

No data available

#### H) Single Target Organ Toxicity - Single Exposure

No data available

#### I) Single Target Organ Toxicity - Repeated Exposure

No data available

#### J) Aspiration Hazard

No data available

#### K) Potential Health Effects and Routes of Exposure

##### **Inhalation**

May be harmful if inhaled. Causes respiratory tract irritation.

##### **Ingestion**

Harmful if swallowed.

##### **Skin**

Toxic if absorbed through skin. Causes skin irritation.

##### **Eyes**

Causes severe eye irritation.

#### L) Signs and Symptoms of Exposure

Burning sensation, Cough, Wheezing, Laryngitis, Shortness of breath, Headache, Nausea, Vomiting.

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

#### M) Additional Information

RTECS: TZ2975000

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No data available.

### 12.2 Persistence and Degradability

No data available.

### 12.3 Bioaccumulative Potential

No data available.

### 12.4 Mobility in Soil

No data available.

### 12.5 Results of PBT and vPvB Assessment

No data available.

### 12.6 Other Adverse Effects

No data available.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

#### A) Product

Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed.

#### B) Contaminated Packaging

Dispose of as above.

#### C) Other Considerations

Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

## 14. TRANSPORT INFORMATION

### 14.1 UN Number

DOT (US): UN1280                      IATA: UN1280                      IMDG: UN1280                      ADR/RID: UN1280

### 14.2 UN Proper Shipping Name

DOT (US)/IATA:

Propylene oxide

IMDG/ARD/RID:

PROPYLENE OXIDE

### 14.3 Transport Hazard Class(es)

DOT (US): 3                      IATA: 3                      IMDG: 3                      ADR/RID: 3

### 14.4 Packing Group

DOT (US): I                      IATA: I                      IMDG: I                      ADR/RID: I

### 14.5 Environmental Hazards

DOT (US): None                      IATA: None                      IMDG: None                      ADR/RID: None

### 14.6 Special Precautions for User

None

## 15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

#### A) Canada

**DSL/NDSL Status:** This product or a component of this product is registered on the Canadian DSL/NDSL.

#### B) United States

**TSCA Status:** This product or a component is listed on the US EPA TSCA.

#### C) European Union

**ECHA Status:** This product or a component is registered with the EU ECHA.

### 15.2 Chemical Safety Assessment

No data available

## 16. OTHER INFORMATION

### 16.1 Revision History

Original Publication Date: 7/18/2019

### 16.2 List of Abbreviations

LD50                      Median lethal dose of a substance required to kill 50% of a test population.  
LC50                      Medial lethal concentration of a substance required to kill 50% of a test population.

LDLo	Lowest known lethal dose
TDLo	Lowest known toxic dose
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances

### **16.3 Further Information**

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.