



Safety Data Sheet

Version 7.0
Revision Date: 04/03/2019

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **Propylene oxide-d₆**
Product abbreviation: D6PO
Product use: For laboratory research purposes.
Supplier / Manufacturer: Polymer Source, Inc.
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2. HAZARDS IDENTIFICATION

Emergency overview: Target organs: Central nervous system
WHMIS classification: B2. Flammable liquid.
D2A. Very toxic material causing other toxic effects: Carcinogen.
D2B. Toxic material causing other toxic effects: Moderate skin irritant; Moderate respiratory irritant; Moderate eye irritant; Mutagen.
GHS classification: Flammable liquids (Category 1).
Acute toxicity, Oral (Category 4).
Acute toxicity, Inhalation (Category 4).
Acute toxicity, Dermal (Category 4).
Skin corrosion / irritation (Category 2).
Serious eye damage / eye irritation (Category 2).
Germ cell mutagenicity (Category 1B).
Carcinogenicity (Category 1B).
Specific target organ toxicity – Single exposure (Category 3), Respiratory system.

GHS Label elements, including precautionary statements:

Pictogram:



Signal word:	Danger
Hazard statements:	<p>H224. Extremely flammable liquid and vapour.</p> <p>H302 + H312 + H332. Harmful if swallowed, in contact with skin or if inhaled.</p> <p>H315. Causes skin irritation.</p> <p>H319. Causes serious eye irritation.</p> <p>H335. May cause respiratory irritation.</p> <p>H340. May cause genetic defects.</p> <p>H350. May cause cancer.</p>
Precautionary statements:	<p>P201. Obtain special instructions before use.</p> <p>P202. Do not handle until all safety precautions have been read and understood.</p> <p>P210. Keep away from heat, sparks, open flames, hot surfaces. No smoking.</p> <p>P233. Keep container tightly closed.</p> <p>P240. Ground and bond container and receiving equipment.</p> <p>P241. Use explosion-proof electrical, ventilating, lighting, equipment.</p> <p>P242. Use non-sparking tools.</p> <p>P243. Take action to prevent static discharges.</p> <p>P261. Avoid breathing dust, fume, gas, mist, vapours, spray.</p> <p>P264. Wash skin thoroughly after handling.</p> <p>P270. Do not eat, drink or smoke when using this product.</p> <p>P271. Use only outdoors or in a well-ventilated area.</p> <p>P280. Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301 + P312 + P330. <i>IF SWALLOWED:</i> Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.</p> <p>P303 + P361 + P353. <i>IF ON SKIN (or hair):</i> Take off immediately all contaminated clothing. Rinse skin with water.</p> <p>P304 + P340 + P312. <i>IF INHALED:</i> Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.</p> <p>P305 + P351 + P338. <i>IF IN EYES:</i> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p>

P308 + P313. *IF exposed or concerned:*
Get medical advice/ attention.

P332 + P313. *If skin irritation occurs:*
Get medical advice/ attention.

P337 + P313. *If eye irritation persists:*
Get medical advice/ attention.

P370 + P378. *In case of fire:*
Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

P403 + P235. Store in a well-ventilated place. Keep cool.

P405. Store locked up.

P501. Dispose of contents / container to an approved waste disposal plant.

HMIS classification:	Health hazard:	2
	Chronic health hazard:	*
	Flammability:	4
	Physical hazards:	0
Potential health effects:	Inhalation:	May be harmful if inhaled. Causes respiratory tract irritation.
	Skin:	Harmful if absorbed through skin. Causes skin irritation.
	Eyes:	Causes eye irritation.
	Ingestion:	Harmful if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Formula:	Propylene oxide-d ₆ :	C ₃ D ₆ O
Synonyms:	Deuterated propylene oxide; 1,2-Epoxypropane-d ₆	
Concentration:	≤ 100 %	
CAS registry number:	Propylene oxide-d ₆ :	202468-69-7

4. FIRST AID MEASURES

General advice:	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
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. 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: Do NOT induce vomiting. Never give anything by mouth to an unconscious person.
Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters: Wear self contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions: Carbon oxides.

Explosion data: Sensitivity to mechanical impact: no data available
Sensitivity to static discharge: no data available

Further information: Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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 an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage: 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.

Store under inert gas. Hygroscopic. Recommended storage temperature -20 °C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters:

<i>Components</i>	<i>Value</i>	<i>Control parameters</i>	<i>Basis</i>	<i>Remarks</i>
Propylene oxide-d6 (CAS-No.: 202468-69-7)	TWA	2.000000 ppm 4.700000 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)	

<i>Components</i>	<i>Value</i>	<i>Control parameters</i>	<i>Basis</i>	<i>Remarks</i>
Propylene oxide-d6 (CAS-No.: 202468-69-7)	TWA	2.000000 ppm	Canada. British Columbia OEL	IARC '2B' applies to substances deemed possibly carcinogenic to humans. Sensitizer: sensitization critical effect.
	TWAEV	20.000000 ppm 48.000000 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants.	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 ppm	USA. ACGIH Threshold Limit Values (TLV)	

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).
- Hand 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.
- Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Skin and body protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., 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.
- Specific engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Form:	CLear, liquid
	Colour:	Colourless
Safety data:	pH:	no data available
	Melting point / Freezing point:	m.p.(lit.): -112 °C (-170 °F)
	Boling point:	b.p.(lit.): 34 °C (93 °F)

Flash point:	(lit.): -37 °C (-35 °F) - closed cup
Ignition temperature:	no data available
Auto-ignition temperature:	no data available
Lower explosion limit:	no data available
Upper explosion limit:	no data available
Vapour pressure:	no data available
Density:	no data available
Water solubility:	no data available
Partition coefficient: n-octanol/water:	no data available
Relative vapour density:	no data available
Odour:	no data available
Odour threshold:	no data available
Evaporation rate:	no data available

10. STABILITY AND REACTIVITY

Chemical stability:	Stable under recommended storage conditions.
Radioactivity:	Stable isotope compound. Not radioactive.
Possibility of hazardous reactions:	Vapours may form explosive mixture with air.
Conditions to avoid:	Heat, flames and sparks.
Materials to avoid:	Strong oxidizing agents.
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Carbon oxides. Other decomposition products: no data available.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Oral LD50:	no data available
	Inhalation LC50:	no data available
	Dermal LD50:	no data available
	Other information on acute toxicity:	no data available
Skin corrosion/irritation:	no data available	
Serious eye damage/eye irritation:	no data available	
Respiratory or skin sensitization:	no data available	
Germ cell mutagenicity:	In vivo tests showed mutagenic effects	
Carcinogenicity:	Possible human carcinogen.	
	IARC: 2B - Group 2B: Possibly carcinogenic to humans (Propylene oxide-d6).	

Reproductive toxicity:	no data available
Teratogenicity:	no data available
Specific target organ toxicity:	Single exposure (GHS): May cause respiratory irritation
	Repeated exposure (GHS): no data available
Aspiration hazard:	no data available
Potential health effects:	Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
	Ingestion: Harmful if swallowed.
	Skin: Harmful if absorbed through skin. Causes skin irritation.
	Eyes: Causes eye irritation.
Signs and symptoms of exposure:	Burning sensation, Cough, Wheezing, Laryngitis, Shortness of breath, Headache, Nausea, Vomiting.
Synergistic effects:	no data available
Additional information:	RTECS: not available

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

13. DISPOSAL CONSIDERATIONS

Product:	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.
Contaminated packaging:	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US):	UN number: 1280
	Class: 3
	Packing group: I
	Proper shipping name: Propylene oxide
	Reportable Quantity (RQ): 100 lbs
	Marine pollutant: No
	Poison Inhalation Hazard: No

IMDG:	UN number: 1280 Class: 3 Packing group: I EMS-No: F-E, S-D Proper shipping name: Propylene oxide Marine pollutant: No
IATA:	UN number: 1280 Class: 3 Packing group: I Proper shipping name: Propylene oxide

15. REGULATORY INFORMATION

WHMIS classification:	B2.	Flammable liquid.
	D2A.	Very toxic material causing other toxic effects: Carcinogen.
	D2B.	Toxic material causing other toxic effects: Moderate skin irritant; Moderate respiratory irritant; Moderate eye irritant; Mutagen.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Date of the latest revision:	4 March 2019
Further information:	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. Polymer Source, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See www.polymersource.ca for additional terms and conditions of sale.