

M A T E R I A L S A F E T Y D A T A S H E E T

Dow Chemical U.S.A.* Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 70557

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PRODUCT NAME: PROPYLENE OXIDE

Effective Date: 06/18/90 Date Printed: 07/18/90

MSDS:000293

1. INGREDIENTS: (% w/w, unless otherwise noted)

Propylene oxide

CAS# 000075-56-9

99.9%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

2. PHYSICAL DATA:

BOILING POINT: 93.6F, 34C
VAP PRESS: 440.7 mmHg @ 20C, 68F
VAP DENSITY: 2.0
SOL. IN WATER: 40.5 gms/100g
SP. GRAVITY: 0.826 @ 25/25C, 77F
APPEARANCE: Colorless liquid.
ODOR: Not available.

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: < -20F, -29C
METHOD USED: TCC

FLAMMABLE LIMITS

LFL: 2.3%
UFL: 36.0%

EXTINGUISHING MEDIA: Water fog, alcohol foam, CO2.

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3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

FIRE & EXPLOSION HAZARDS:

In advanced or massive fires, fire fighting should be done from a safe distance, or from a protected location. Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. Keep vapors away from possible ignition sources.

FIRE-FIGHTING EQUIPMENT: Wear positive pressure self-contained breathing apparatus.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Avoid acid and base type catalysts and clay based absorbents.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Acid, base, oxidizing material, and clay base absorbent materials.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

HAZARDOUS POLYMERIZATION: May occur when in contact with highly active catalytic surfaces such as anhydrous chlorides of iron, tin, aluminum, peroxides of iron and aluminum, alkali metal hydroxides, and clay based absorbents. (Anything to change neutrality of PO can cause polymerization).

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: The area must be evacuated and reentered by persons equipped for decontamination.

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5. ENVIRONMENTAL AND DISPOSAL INFORMATION: (CONTINUED)

Respiratory protection: Wear positive pressure self-contained breathing apparatus. Since material is flammable, do not wash directly into sewer. Drain away from storage facility if possible. Avoid the use of clay based absorbent materials.

DISPOSAL METHOD: Wash down with copious amounts of water. Check with local authorities or The Dow Chemical Company for proper disposal.

6. HEALTH HAZARD DATA:

EYE: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Vapors may irritate eyes.

SKIN CONTACT: Prolonged or repeated exposure not likely to cause significant skin irritation. May cause more severe response if confined to skin. Aqueous solutions may cause more severe effects including burns.

SKIN ABSORPTION: A single prolonged exposure may result in the material being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is 1240 mg/kg.

INGESTION: Single dose oral toxicity is moderate. The oral LD50 for rats is in the range of 300-1000 mg/kg.

INHALATION: A single prolonged (hours) excessive inhalation exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract. Observations in animals include lung and mild central nervous system effects.

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6. HEALTH HAZARD DATA: (CONTINUED)

SYSTEMIC (OTHER TARGET ORGAN EFFECTS): Repeated excessive exposures may cause eye and respiratory irritation. Early studies in laboratory animals report lung injury.

CANCER INFORMATION: For hazard communication purposes under OSHA Standard 29 CFR Part 1919.1200, this chemical is listed as a potential carcinogen by IARC and NTP. Lifetime inhalation studies in laboratory animals with propylene oxide suggest a weak carcinogenic effect.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

REPRODUCTIVE EFFECTS: In animals studies, has been shown not to interfere with reproduction.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Results of in vitro (test tube) mutagenicity tests have been positive. Results of most mutagenicity studies in animals have been negative; some have been positive.

7. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician if irritation persists.

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7. FIRST AID: (CONTINUED)

Wash clothing before reuse. Destroy contaminated shoes.

INGESTION: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. (Never give anything by mouth to or attempt to induce vomiting in an unconscious person).

INHALATION: Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Call a physician.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): ACGIH TLV and OSHA PEL are 20 ppm.
Dow Industrial Hygiene Guide is 3 ppm.

VENTILATION: Control airborne concentrations below the exposure guideline. Local exhaust ventilation may be necessary for some operations.

RESPIRATORY PROTECTION: Use an approved full-face air-purifying respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive pressure self-contained breathing apparatus.

SKIN PROTECTION: Do not wear rings, watches, gloves or similar apparel because they can entrap material and cause a burn.
For brief contact, no precautions other than clean body-covering

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8. HANDLING PRECAUTIONS: (CONTINUED)

clothing should be needed. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

EYE PROTECTION: Use chemical goggles. If vapor exposure causes eye irritation, use a full-face respirator.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: This product is not normally stored in cool areas; neither is it necessary to cool product while it is being stored. Storage facilities should be insulated against fire exposure of storage vessels. All storage tanks and shipments of PO must be padded with nitrogen. Avoid breathing vapors. Do not get in eyes, and avoid contact with skin.

MSDS STATUS: Revised section 9 and regsheet.

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REGULATORY INFORMATION: (Not meant to be all-inclusive--selected regulations represented.)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
PROPYLENE OXIDE	000075-56-9	99 %

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

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REGULATORY INFORMATION: (CONTINUED)

A delayed health hazard

A fire hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement ACT of 1986: This product contains a chemical(s) known to the State of California to cause cancer. (See Section 6 of the MSDS for details on carcinogenicity.)

CANADIAN REGULATIONS

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The Workplace Hazardous Materials Information System (W.H.M.I.S.)
Classification for this product is:

B2
D18
D2A
D2B

The Transportation of Dangerous Goods Act (T.D.G.A.) classification for this product is:

Propylene Oxide/Class 3.1, (9.2)/UN1280/1 ERP2-0011

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REGULATORY INFORMATION: (CONTINUED)

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