

# Material Safety Data Sheet



## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

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24-Hour Emergency Phone Number: 989-636-4400

Product: DOWANOL\* DPM GLYCOL ETHER

Product Code: 22345

Effective Date: 08/10/04      Date Printed: 08/11/04      MSD: 000045

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Dipropylene glycol monomethyl ether      CAS# 034590-94-8      99%

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

\*\*\*\*\*  
\* Clear, colorless liquid. Slight ether odor. Combustible. \*  
\*\*\*\*\*

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause slight transient (temporary) eye irritation.  
Corneal injury is unlikely.

SKIN: Prolonged exposure not likely to cause significant skin irritation. Prolonged skin contact with very large amounts may cause drowsiness.

INGESTION: Single dose oral toxicity is considered to be extremely low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.

INHALATION: Excessive exposure may cause irritation to upper respiratory tract. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Observations in animals include minor liver or kidney effects. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

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TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely.  
Exposures having no adverse effects on the mother should  
have no effect on the fetus.

#### 4. FIRST AID

EYE: Flush eyes thoroughly with water for several minutes.  
Remove contact lenses after initial 1-2 minutes and continue  
flushing for several additional minutes. If effects occur,  
consult a physician, preferably an ophthalmologist.

SKIN: Wash skin with plenty of water.

INGESTION: If swallowed, seek medical attention. Do not induce  
vomiting unless directed to do so by medical personnel.

INHALATION: Move person to fresh air. If not breathing, give  
artificial respiration. If breathing is difficult, oxygen  
should be administered by qualified personnel. Call a  
physician or transport to a medical facility.

NOTE TO PHYSICIAN: Maintain adequate ventilation and oxygenation  
of the patient. No specific antidote. Treatment of exposure  
should be directed at the control of symptoms and the clinical  
condition of the patient.

#### 5. FIRE FIGHTING MEASURES

##### FLAMMABLE PROPERTIES

FLASH POINT: 175F, 79.4C

METHOD USED: TCC

AUTOIGNITION TEMPERATURE: Not determined.

##### FLAMMABILITY LIMITS

LFL: 1.1 vol% @ 100C

UFL: 14 vol% @ 150C

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain  
the original material in addition to unidentified toxic and/or  
irritating compounds. Hazardous combustion products may include  
and are not limited to: carbon monoxide, carbon dioxide.

OTHER FLAMMABILITY INFORMATION: Violent steam generation or erup-  
tion may occur upon application of direct water stream to hot.  
liquids. Spills of these organic liquids on hot fibrous

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insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

EXTINGUISHING MEDIA: Water fog or fine spray, carbon dioxide, dry chemical, foam. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

MEDIA TO BE AVOIDED: Do not use direct water stream.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

#### 6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Isolate area.

PROTECT THE ENVIRONMENT: Contain liquid to prevent contamination of soil, surface water or ground water.

CLEANUP: Clean up residual with non-combustible absorbent material and wash with water. Collect material in suitable and properly labeled open containers.

#### 7. HANDLING AND STORAGE

HANDLING: Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

STORAGE: Store in carbon steel, stainless steel, Teflon.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

#### PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Use safety glasses.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use chemically protective clothing resistant to this material. Selection of specific items such as face-shield, 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 re-use or dispose of properly.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

EXPOSURE GUIDELINES: Dipropylene glycol methyl ether: ACGIH TLV is 100 ppm TWA, 150 ppm STEL, Skin. OSHA PEL is 100 ppm TWA.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Clear, colorless liquid  
ODOR: Slight ether .  
VAPOR PRESSURE: 0.41 mmHg @ 25C  
VAPOR DENSITY: 5.14  
BOILING POINT: 374F, 190C  
SOLUBILITY IN WATER: Infinitely  
SPECIFIC GRAVITY: 0.951 @ 25/25C  
VOLATILE ORGANIC COMPOUNDS (VOC) CONTENT: 951 g/L or 7.91 lb/gal  
as per Rule 443.1 of California SCAQMD

#### 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions.

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See Storage Section.

CONDITIONS TO AVOID: Avoid static discharge. Flammable vapors can be released at elevated temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Does not normally decompose. Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The LD50 for skin absorption in rabbits is > 20 ml/kg.

INGESTION: The oral LD50 for rats is 5.4 ml/kg.

MUTAGENICITY: In vitro mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

#### ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is estimated using a structural fragment method to be -0.35. Potential for mobility in soil is very high (Koc between 0 and 50). Soil organic/carbon water partition coefficient (Koc) is estimated to be 0.281. Henry's Law Constant (H) is estimated to be 1.6E-07 atm-m<sup>3</sup>/mole.

DEGRADATION & PERSISTENCE: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable. Reaches more than 70% mineralization in OECD test(s) for inherent biodegradability. Biodegradation rate may increase in soil and/or water with acclimation. The 20-Day Biochemical Oxygen Demand (BOD20) is 0.65 p/p. In the atmospheric environment, material is estimated to have a tropospheric half-life of 3.4 - 10.4 hr. Biodegradation

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reached in Modified OECD Screening Test (OECD Test No. 301 E) after 28 days: 72.9%. Biodegradation reached in Manometric Respirometry Test (OECD Test No. 301 F) after 28 days: 75%.

ECOTOXICITY: Material is practically non-toxic to aquatic organisms on an acute basis (LC50 or EC50 >100 mg/L in the most sensitive species tested). Acute LC50 in emerald shiner (*Notropis atherinoides*) is >150 mg/L. Acute LC50 in fathead minnow (*Pimephales promelas*) is >10000 mg/L. Acute LC50 in water flea *Daphnia magna* is 1919 mg/L. The 21-day no observed effect concentration level (NOEC) (reproduction) in water flea *Daphnia magna* is >0.5 mg/L. Maximum acceptable toxicant concentration (MATC) in water flea *Daphnia magna* is >0.5 mg/L. Growth inhibition threshold in bacteria is 4168 mg/L. Growth inhibition EC50 in green alga *Selenastrum capricornutum* is >969 mg/L.

#### 13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 989-832-1556 for further details.

#### 14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.): For DOT regulatory information, if required, consult transportation regulations, product

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shipping papers, or your Dow representative.

CANADIAN TDG INFORMATION: For TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

15. 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 other sections for health and safety information.

U.S. REGULATIONS  
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SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

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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
- A fire hazard

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TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

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The CAS Number for TSCA is 034590-94-8

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REGULATORY INFORMATION (CONTINUED)

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STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
DIPROPYLENE GLYCOL METHYL ETHER	034590-94-8	PA1

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

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OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	0
Flammability	2
Reactivity	0

CANADIAN REGULATIONS

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WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

B3 - combustible liquid with a flash point between 37.8C and 93.3C  
Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

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## REGULATORY INFORMATION (CONTINUED)

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

COMPONENTS:	CAS #	AMOUNT(%w/w)
DIPROPYLENE GLYCOL MONOMETHYL ETHER	034590-94-8	99%

## 16. OTHER INFORMATION

MSDS STATUS: Revised Sections 4,8,12,15 (Canadian 3-yr review).

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	0
Flammability	2
Reactivity	0

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The Information Herein Is Given In Good Faith, But No Warranty,  
Express Or Implied, Is Made. Consult The Dow Chemical Company  
For Further Information.