



Safety Data Sheet

Dow Chemical Company Ltd

Product Name: DOWANOL* DPNB glycol ether

Revision Date: 2007/04/30

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Dow Chemical Company Ltd encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Identification of the substance/preparation and of the company/undertaking

Product Name

DOWANOL* DPNB glycol ether

Use of the substance/preparation

Industrial solvent for cleaner and coating formulations.

COMPANY IDENTIFICATION

Dow Chemical Company Ltd
2 Heathrow Blvd., 284 Bath Rd
UB7 0DQ West Drayton, Middlesex, EN
United Kingdom

Customer Information Number: 0208-917-5000

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: +44 (0) 1553 761 251

Local Emergency Contact: 00 44 155 37 61 251

2. Composition/information on ingredients

Component	Amount	Classification:	CAS #	EC #
Dipropylene glycol n-butylether	> 98.5 %	Not classified.	29911-28-2	249-951-5

3. Hazards Identification

This product is not classified as dangerous according to EC criteria.

4. First-aid measures

* Indicates a Trademark

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

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

Notes to Physician: 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

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Sand. Vermiculite. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: Avoid contact with eyes. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: 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. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel. See Section 10 for more specific information.

Storage Period:, Shelf life: Use within, Bulk 6 Months

Steel drums. 24 Months

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Dipropylene glycol n-butylether	Dow IHG	TWA	10 mg/m ³

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin Protection: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. **NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 °C)

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

9. Physical and Chemical Properties

Physical State	Liquid
Color	Colorless
Odor	Ether
Flash Point - Closed Cup	100 °C <i>Setflash Closed Cup ASTM D3278</i>

Flammable Limits In Air	Lower: 0.6 %(V) <i>Literature</i> Upper: 20.4 %(V) <i>Literature</i>
Autoignition Temperature	194 °C <i>Literature</i>
Vapor Pressure	< 0.01 kPa @ 20 °C <i>Literature</i>
Boiling Point (760 mmHg)	230 °C <i>Literature</i> .
Vapor Density (air = 1)	6.60 <i>Literature</i>
Specific Gravity (H2O = 1)	0.910 25 °C/25 °C <i>Literature</i>
Freezing Point	No test data available
Melting Point	No test data available
Solubility in Water (by weight)	4.5 % @ 25 °C <i>Literature</i>
pH	No test data available
Octanol/Water Partition Coefficient	1.13 <i>Estimated</i>
Dynamic Viscosity	4.9 mPa.s @ 25 °C <i>Literature</i>

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7.

Conditions to Avoid: Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

11. Toxicological Information

Acute Toxicity

Ingestion

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat, female 3,700 mg/kg

LD50, Rat, male 4,400 mg/kg

Eye Contact

May cause moderate eye irritation which may be slow to heal. May cause slight corneal injury.

Skin Contact

Prolonged contact may cause slight skin irritation with local redness.

Skin Absorption

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit, male 6,490 mg/kg

LD50, Rabbit, female 5,330 mg/kg

Inhalation

Prolonged exposure is not expected to cause adverse effects.

LC50, 4 h, Aerosol, Rat > 2.04 mg/l

Sensitization

Skin

Did not cause allergic skin reactions when tested in humans. Did not cause allergic skin reactions when tested in guinea pigs.

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Liver. Respiratory tract. Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Developmental Toxicity

Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity

In animal studies, did not interfere with reproduction.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 3.78E-7 atm*m3/mole; 25 °C Estimated

Partition coefficient, n-octanol/water (log Pow): 1.13 Estimated

Partition coefficient, soil organic carbon/water (Koc): 10 - 21 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
91 %	28 d	OECD 301E Test
96 %	28 d	OECD 302B Test

ECOTOXICITY

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, guppy (Poecilia reticulata), 96 h: 841 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna: > 1,000 mg/l

13. Disposal Considerations

Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

ROAD & RAIL

NOT REGULATED

OCEAN

NOT REGULATED

AIR

NOT REGULATED

|| INLAND WATERWAYS
NOT REGULATED**15. Regulatory Information****European Inventory of Existing Commercial Chemical Substances (EINECS)**

This product is on the EINECS inventory.

EC Classification and User Label Information

|| This product is not classified as dangerous according to EC criteria.

16. Other Information**Product Literature**

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact.

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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