



Material Safety Data Sheet

DOW CHEMICAL PACIFIC

Product Name: DOWANOL™ PPH GLYCOL ETHER

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DOW CHEMICAL PACIFIC 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™ PPH GLYCOL ETHER

Identified uses

Solvent for consumer and industrial applications.

COMPANY IDENTIFICATION

DOW CHEMICAL PACIFIC
(SINGAPORE) PRIVATE LIMITED
260 ORCHARD RD, #18-01 THE HEEREN
SINGAPORE 238855
SINGAPORE

Customer Information Number:

(65) 6835-3773
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

1-800-332-3543

Local Emergency Contact:

1800-332-3543

2. Hazards Identification

Classification of the substance or mixture

Hazard Class:

Serious eye damage/eye irritation

Category 2

Label elements

Hazard Symbol:



Signal Word: Warning

Hazards of product:

Causes serious eye irritation.

Precautionary Statements:

Prevention: Wear eye protection/face protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

3. Composition/information on ingredients

Component	CAS #	Amount
Propylene glycol phenyl ether	770-35-4	> 99.5 %

4. First aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

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

Skin Contact: Wash skin with plenty of water.

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. Suitable emergency eye wash facility should be immediately available.

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

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

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

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Special hazards arising from the substance or mixture

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.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment.

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.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

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

Methods and materials for containment and cleaning up: 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.

7. Handling and Storage

Handling

General Handling: Do not get in eyes. Avoid contact with skin and clothing. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: 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.

Shelf life: Use within, Bulk 6 Months

Metal drums. 24 Months

8. Exposure Controls / Personal Protection

Exposure Limits

None established

Personal Protection

Eye/Face Protection: Use chemical goggles.

Skin Protection: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. 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"). 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. Use an approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance

Physical State

Liquid.

Color

Colorless

Odor

Very slight

Odor Threshold

No test data available

pH

No test data available

Melting Point

No test data available

Freezing Point

19 °C *Literature*

Boiling Point (760 mmHg)

243 °C *Literature*

Flash Point - Closed Cup

115 °C *Setaflash Closed Cup ASTM D3278*

Evaporation Rate (Butyl Acetate = 1)

No test data available

Flammability (solid, gas)

Not applicable to liquids

Flammable Limits In Air

Lower: 0.8 % (V) *Literature*

Upper: Not determined

Vapor Pressure

0.01 mmHg @ 20 °C *Literature*

Vapor Density (air = 1)

5.27 *Literature*

Specific Gravity (H₂O = 1)

1.060 20 °C/20 °C *ASTM D4052*

Solubility in water (by weight)

2 % @ 25 °C *Literature*

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

1.52 *Estimated*.

Autoignition Temperature

495 °C *Literature*

Decomposition

No test data available

Temperature

Dynamic Viscosity

6.5 mPa.s @ 25 °C *Literature*

Kinematic Viscosity	No test data available
Liquid Density	8.83 lb/gal @ 25 °C <i>Literature</i>
Molecular Weight	No test data available
Henry's Law Constant (H)	4.41E-07 atm*m3/mole; 25 °C Estimated.

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Thermally stable at typical use temperatures.

Possibility of hazardous reactions

Will not occur.

Conditions to Avoid: Do not distill to dryness. Product can oxidize at elevated temperatures.

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

Hazardous decomposition products

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 > 2,830 mg/kg

Aspiration hazard

Based on physical properties, not likely to be an aspiration hazard.

Dermal

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

LD50, Rabbit > 2,000 mg/kg

Inhalation

At room temperature, vapors are minimal due to low volatility. Vapor from heated material or mist may be hazardous on single exposure. For respiratory irritation and narcotic effects: No relevant data found.

No deaths occurred following exposure to a saturated atmosphere. , Vapor, Rat

Eye damage/eye irritation

May cause severe eye irritation. May cause slight corneal injury.

Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Sensitization

Skin

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

Respiratory

No relevant data found.

Repeated Dose Toxicity

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Chronic Toxicity and Carcinogenicity

No specific, relevant data available for assessment.

Developmental Toxicity

|| No specific, relevant data available for assessment.

Reproductive Toxicity

|| No specific, relevant data available for assessment.

Genetic Toxicology

|| Animal genetic toxicity studies were predominantly negative.

12. Ecological Information

Toxicity

|| Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| LC50, fathead minnow (*Pimephales promelas*), static, 96 h: 280 mg/l

Aquatic Invertebrate Acute Toxicity

|| LC50, water flea *Daphnia magna*, static, 48 h, survival: 370 mg/l

Persistence and Degradability

|| Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation rate may increase in soil and/or water with acclimation.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
72 %	28 d	OECD 301F Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
3.72E-11 cm ³ /s	3.5 h	Estimated.

|| Theoretical Oxygen Demand: 2.31 mg/mg

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 1.52 Estimated.

Mobility in soil

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): 19 - 21 Estimated.

|| **Henry's Law Constant (H):** 4.41E-07 atm*m³/mole; 25 °C Estimated.

Results of PBT and vPvB assessment

|| This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

Other adverse effects

|| This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

13. Disposal Considerations

Disposal methods DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices 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. AS YOUR

SUPPLIER, WE HAVE 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: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

ROAD & RAIL Non-Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

This product is classified as dangerous according to Singapore Standards, Factories Act and Regulations, Environmental Pollution Control Act and Regulations, Fire Safety Act and Regulations and Poisons Act.

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations

This product is subject to the SDS, labeling, PEL and other requirements in the Act/Regulations.

16. Other Information

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure.

Revision

Identification Number: 82587 / A167 / Issue Date 10.09.2012 / Version: 3.0

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

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation

DOW CHEMICAL PACIFIC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided 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 between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.