



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name:** DOWANOL™ PNP GLYCOL ETHER

**Issue Date:** 03/02/2015

**Print Date:** 03/03/2015

THE DOW CHEMICAL COMPANY 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.

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## 1. IDENTIFICATION

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**Product name:** DOWANOL™ PNP GLYCOL ETHER

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Industrial solvent for cleaner and coating formulations.

**COMPANY IDENTIFICATION**

THE DOW CHEMICAL COMPANY  
2030 WILLARD H DOW CENTER  
MIDLAND MI 48674-0000  
UNITED STATES

**Customer Information Number:**

800-258-2436

SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 800-424-9300

**Local Emergency Contact:** 989-636-4400

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## 2. HAZARDS IDENTIFICATION

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**Hazard classification**

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Flammable liquids - Category 3

Eye irritation - Category 2A

**Label elements**

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Flammable liquid and vapour.  
Causes serious eye irritation.

**Precautionary statements****Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Wash skin thoroughly after handling.  
Wear protective gloves/ eye protection/ face protection.

**Response**

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/ attention.  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage**

Store in a well-ventilated place. Keep cool.

**Disposal**

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

**Other hazards**

no data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Synonyms:** 1-Propoxy-propanol-2

This product is a substance.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
1-Propoxy-2-propanol	1569-01-3	> 99.0 %

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**4. FIRST AID MEASURES**

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**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 off 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. Eye wash fountain should be located in immediate work area.

**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), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

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## **5. FIREFIGHTING MEASURES**

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**Suitable 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.

**Unsuitable extinguishing media:** no data available

**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:** 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.

**Advice for firefighters**

**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 contracting 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.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Isolate area. Refer to section 7, Handling, for additional precautionary measures. 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.

**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.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Keep away from heat, sparks and flame. 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. Avoid contact with eyes. Wash thoroughly after handling. Avoid breathing vapor. Use with adequate ventilation. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

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.

**Conditions for safe 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 stability**

**Storage Period:; Steel drums.** 24 Month

**Bulk** 6 Month

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Control parameters**

Exposure limits are listed below, if they exist.

None established

**Exposure controls**

**Engineering controls:** 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.

**Individual protection measures**

**Eye/face protection:** Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. 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.

**Other protection:** When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

**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.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

<b>Physical state</b>	Liquid.
<b>Color</b>	Colorless
<b>Odor</b>	Ether
<b>Odor Threshold</b>	No test data available
<b>pH</b>	No test data available
<b>Melting point/range</b>	-70 °C (-94 °F) <i>Literature</i>
<b>Freezing point</b>	-70 °C (-94 °F) <i>Literature</i>
<b>Boiling point (760 mmHg)</b>	149 °C (300 °F) at 1,013 hPa <i>Literature</i>
<b>Flash point</b>	<b>closed cup</b> 46 °C (115 °F) at 1,013 hPa <i>Literature</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	Not applicable to liquids
<b>Lower explosion limit</b>	1.3 % vol <i>Literature</i>
<b>Upper explosion limit</b>	10.6 % vol <i>Literature</i>
<b>Vapor Pressure</b>	3.8 hPa at 25 °C (77 °F) <i>Literature</i>
<b>Relative Vapor Density (air = 1)</b>	No test data available

<b>Relative Density (water = 1)</b>	0.8805 at 25 °C (77 °F) <i>Literature</i>
<b>Water solubility</b>	100 % at 30 °C (86 °F) <i>Literature</i> Miscible in all proportions
<b>Partition coefficient: n-octanol/water</b>	log Pow: 0.621 <i>Calculated.</i>
<b>Auto-ignition temperature</b>	252 °C (486 °F) at 1,013 hPa <i>Literature</i>
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	2.389 mPa.s at 25 °C (77 °F) <i>Literature</i>
<b>Kinematic Viscosity</b>	No test data available
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No
<b>Liquid Density</b>	0.8805 g/cm <sup>3</sup> at 25 °C (77 °F) <i>Literature</i>
<b>Molecular weight</b>	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.

**Possibility of hazardous reactions:** Polymerization will not occur.

**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 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.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information on this product or its components appear in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

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. Observations in animals include: Anesthetic or narcotic effects.

LD50, Rat, > 2,000 mg/kg

**Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts. Observations in animals include: Anesthetic or narcotic effects.

LD50, Rabbit, > 2,000 mg/kg

**Acute inhalation toxicity**

Brief exposure (minutes) is not likely to cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Observations in animals include: Anesthetic or narcotic effects.

LC0, Rat, 4 Hour, vapour, 8.34 mg/l No deaths occurred at this concentration.

**Skin corrosion/irritation**

Prolonged contact may cause slight skin irritation with local redness.  
Repeated exposure may cause irritation, even a burn.  
May cause more severe response if skin is abraded (scratched or cut).  
May cause drying and flaking of the skin.

**Serious eye damage/eye irritation**

May cause moderate eye irritation.  
May cause moderate corneal injury.  
Vapor may cause corneal injury.

**Sensitization**

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In animals, effects have been reported on the following organs:  
Eye.  
May cause central nervous system effects.

**Carcinogenicity**

No relevant data found.

**Teratogenicity**

Did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

In animal studies, a similar material has been shown not to interfere with reproduction.

**Mutagenicity**

In vitro genetic toxicity studies were negative.

**Aspiration Hazard**

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

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information on this product or its components appear in this section when such data is available.*

### Toxicity

#### Acute toxicity to fish

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).

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

#### Acute toxicity to aquatic invertebrates

LC50, *Daphnia magna* (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

#### Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, 96 Hour, Biomass, 1,466 mg/l, OECD Test Guideline 201 or Equivalent

#### Toxicity to bacteria

EC50, Bacteria, static test, 16 Hour, 3,800 mg/l

### Persistence and degradability

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 91.5 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301A or Equivalent

**Theoretical Oxygen Demand:** 2.30 mg/mg

#### Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	4 - 9 %
10 d	29 - 50 %
20 d	62 - 84 %

#### Photodegradation

**Atmospheric half-life:** 4.9 Hour

**Method:** Estimated.

### Bioaccumulative potential

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



**Partition coefficient: n-octanol/water(log Pow):** 0.621 at 20 °C Calculated.

#### Mobility in soil

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

**Partition coefficient(Koc):** 1 - 1.9 Estimated.

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### 13. DISPOSAL CONSIDERATIONS

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**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.

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### 14. TRANSPORT INFORMATION

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#### DOT

<b>Proper shipping name</b>	Combustible liquid, n.o.s.(1-Propoxy-2-propanol)
<b>UN number</b>	NA 1993
<b>Class</b>	CBL
<b>Packing group</b>	III

#### Classification for SEA transport (IMO-IMDG):

<b>Proper shipping name</b>	FLAMMABLE LIQUID, N.O.S.(1-Propoxy-2-propanol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III
<b>Marine pollutant</b>	No
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

#### Classification for AIR transport (IATA/ICAO):

<b>Proper shipping name</b>	Flammable liquid, n.o.s.(1-Propoxy-2-propanol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. 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.

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## 15. REGULATORY INFORMATION

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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.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Pennsylvania Worker and Community Right-To-Know Act:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

### United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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## 16. OTHER INFORMATION

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### Product Literature

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

### Hazard Rating System

#### NFPA

Health	Fire	Reactivity
2	2	0

**Revision**

Identification Number: 101213103 / A001 / Issue Date: 03/02/2015 / Version: 6.0

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

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY 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.