

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: DB Solvent
Product Description: -
Chemical Formula: C₈H₁₈O₃, CH₃(CH₂)₃OCH₂CH₂OCH₂CH₂OH
Recommended Use: Solvent

COMPANY IDENTIFICATION

Supplier: UNION PETROCHEMICAL PUBLIC COMPANY LIMITED
728 Union House Building, Baromratchonnani Rd.,
Bangbumru, Bangplad, Bangkok 10700
Supplier General Contact: +662 881 8288

This (M)SDS is a generic document with no country specific information included.

SECTION 2 HAZARDS IDENTIFICATION

Hazard classification:

Health Hazards

Eye Irritation: Category 2A

OSHA Specified Hazards: N/A

GHS LABEL ELEMENTS:

Pictogram:



Signal Word: Warning

Hazard Statements:

Health: H319: Causes serious eye irritation.

Precautionary Statements:

Prevention: P264: Wash skin thoroughly after handling. P280: Wear eye protection/face protection.

Response: P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical advice/attention.

Other hazard information: Forms peroxides of unknown stability.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a substance/mixtures.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*
DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove to fresh air. Treat symptomatically. If symptoms persist, call a physician.

SKIN CONTACT

Wash off immediately with soap and plenty of water. Get medical attention if irritation develops and persists.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical advice/attention.

INGESTION

Seek medical advice.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Causes serious eye irritation.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Alcohol-resistant foam. Water spray. Dry chemical.
Carbon dioxide (CO₂).

Inappropriate Extinguishing Media: None known.

FIRE FIGHTING

Special Protective Equipment for Fire-fighters: Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

Special Hazards arising from the substance: Forms peroxides of unknown stability.

Hazardous combustion products: No hazardous combustion products are known.

Further information : None known.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear appropriate personal protective equipment. Treat recovered material as described in the section "Disposal considerations".

ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7 HANDLING AND STORAGE

ADVICE ON SAFE HANDLING

Wash thoroughly after handling.

CONDITIONS FOR SAFE STORAGE

Keep container tightly closed.

MATERIALS TO AVOID

Keep container tightly closed.

FURTHER INFORMATION ON STORAGE STABILITY

Store away from other materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters/Exposure limits:

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard	Source
DIETHYLENE GLYCOL MONOBUTYL ETHER – INHALABLE FRACTION AND VAPOR	TWA	10 ppm	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

PERSONAL PROTECTION

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. For high airborne concentrations, use an approved supplied air respirator. Supplied air respirators with an escape bottle may be

Eye Protection: Wear safety glasses with side shields (or goggles).

Protective measures: Ensure that eye flushing systems and safety showers are located close to the working place.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Colorless
Odour: Very faint
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

pH:	N/D		
Freezing Point:	-90°F / -68°C		
Boiling Point / Range:	446.7°F / 230.4°C		
Flash Point:	224°F / 114°C		
Evaporation Rate:	N/D		
Flammability (Solid, Gas):	N/A		
Self-ignition:	410°F / 210°C		
Flammable Limits (Approximate volume % in air):	LEL: 0.7	UEL: 24.6	
Vapor Pressure:	2.9 Pa at 77°F / 25°C		
Vapor Density (Air = 1):	5.6		
Specific gravity (at 20°C):	0.955		
Solubility(ies)			
Solubility in Water:	0.955 g/l at at 68°F / 20°C		
Partition coefficient (n-octanol/water):	log Pow = 1		
Autoignition Temperature:	N/D		
Decomposition Temperature:	N/D		
Dynamic Viscosity:	6 mPa.s at 68°F / 20°C		
Kinematic Viscosity	6.28 mm ² /s at 68°F / 20°C		
Explosive properties:	Not classified		
Oxidizing properties:	Not classified		
Surface tension:	69 mN/m at 68°F / 20°C		
Molecular weight :	162.2 g/mol		

SECTION 10

STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions.

REACTIVITY: None reasonably foreseeable.

CONDITIONS TO AVOID: Incompatible materials.

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Dioxide. Carbon Monoxide.

POSSIBILITY OF HAZARDOUS REACTIONS: Forms peroxides of unknown stability. Stable

SECTION 11

TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity :	LD50 Oral (Rat): 4,500 mg/kg
Acute inhalation toxicity :	LC50 (Rat): > 29 ppm Exposure time: 2 h
Acute dermal toxicity :	LD50 Dermal (Rabbit): 2,764 mg/kg

Components:

diethylene glycol monobutyl ether:

Acute oral toxicity :	LD50 Oral (Rat): 4,500 mg/kg
Acute inhalation toxicity :	LC50 (Rat): > 29 ppm Exposure time: 2 h
Acute dermal toxicity :	LD50 Dermal (Rabbit): 2,764 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Exposure time : 4 h
Result : slight

Components:

diethylene glycol monobutyl ether:

Species : Rabbit
Exposure time : 4 h
Result : slight

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Species : Rabbit
Result : slight
Exposure time : 24 h

Components:

diethylene glycol monobutyl ether:

Species : Rabbit
Result : slight
Exposure time : 24 h

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Test Type : Skin Sensitization
Species : Guinea pig
Result : non-sensitizing

Components:

diethylene glycol monobutyl ether:

Test Type : Skin Sensitization
Species : Guinea pig
Result : non-sensitizing

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Result: negative

Test Type: Mutagenicity - Mammalian
Metabolic activation: +/- activation
Result: negative

Genotoxicity in vivo : Species: Mouse
Application Route: oral: gavage
Result: negative

Components:

diethylene glycol monobutyl ether:

Genotoxicity in vitro : Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Result: negative

Test Type: Mutagenicity - Mammalian
Metabolic activation: +/- activation
Result: negative

Genotoxicity in vivo : Species: Mouse
Application Route: oral: gavage
Result: negative

Carcinogenicity

Not classified based on available information.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Product:

Effects on fertility : Remarks: No data available

STOT-single exposure

Not classified based on available information.

Product:

Remarks : No data available

STOT-repeated exposure

Not classified based on available information.

Product:

Remarks : No data available

Repeated dose toxicity

Product:

Species : Rat
NOAEL : 250 mg/kg
Application Route : Ingestion
Exposure time : 90 d

Species : Rat
NOAEL : > 2,000 mg/kg
Application Route : Dermal Study

Exposure time : 90 d
Remarks : (highest dose tested)

Species : Rat
NOAEL : > 0.094 mg/l
Application Route : Inhalation study:
Exposure time : 90 d

Components:
diethylene glycol monobutyl ether:

Species : Rat
NOAEL : 250 mg/kg
Application Route : Ingestion
Exposure time : 90 d

Species : Rat
NOAEL : > 2,000 mg/kg
Application Route : Dermal Study
Exposure time : 90 d
Remarks : (highest dose tested)

Species : Rat
NOAEL : > 0.094 mg/l
Application Route : Inhalation study:
Exposure time : 90 d

Aspiration toxicity

Not classified based on available information.

Product:

No data available

Information on likely routes of exposure

Product:

Inhalation : Remarks: None known.
Skin contact : Remarks: None known.
Eye contact : Remarks: Causes eye irritation.
Ingestion : Remarks: None known.

SECTION 12

ECOLOGICAL INFORMATION

Ecotoxicity

Components:

diethylene glycol monobutyl ether:

Toxicity to fish : LC50 (Fish): 1,300 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): \geq 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Chlorella pyrenoidosa): > 100 mg/l
Exposure time: 96 h

Persistence and degradability

Components:

diethylene glycol monobutyl ether:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 85 %
Exposure time: 28 d
Method: Ready Biodegradability: Modified MITI Test (I)

Biochemical Oxygen Demand (BOD) : BOD-5:
250 mg/g

Chemical Oxygen Demand (COD) : 2,080 mg/g

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13

DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Waste from residues : Dispose of as hazardous waste in compliance with local and national regulations.

SECTION 14

TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Product name : POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6)ETHER
Pollution category : Z
Ship type : 3

Domestic regulation

49 CFR

Not regulated as a dangerous good

SECTION 15

REGULATORY INFORMATION

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

SARA 311/312 Hazards: Serious eye damage or eye irritation

SARA 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.

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

TCSI:	On the inventory, or in compliance with the inventory
TSCA:	All substances listed as active on the TSCA inventory
AICS:	On the inventory, or in compliance with the inventory
DSL:	All components of this product are on the Canadian DSL
ENCS:	On the inventory, or in compliance with the inventory
ISHL:	On the inventory, or in compliance with the inventory
KECI:	On the inventory, or in compliance with the inventory
PICCS:	On the inventory, or in compliance with the inventory
IECSC:	On the inventory, or in compliance with the inventory
NZIoC:	On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

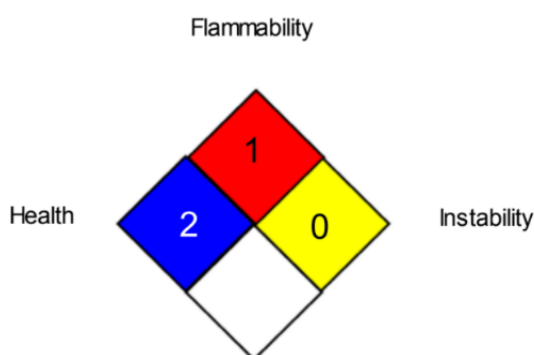
SECTION 16

OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

Further information

NFPA 704:



HMIS® IV:

HEALTH	/	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "/" represents a chronic hazard, while the "0" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA : 8-hour, time-weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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