



## Safety Data Sheet

### 1. PRODUCT IDENTIFICATION

Name	<b>Glycol Ether DPnB</b>
Synonyms	1-(2-butoxy-1-methylethoxy)-2-propanol; n-butoxypropoxypropanol; dipropylene glycol n-butyl ether
CAS#	29911-28-2
Europe EC#	249-951-5
Product Uses	solvent

### 2. HAZARDS

**Quick Guide:** combustible liquid; no health hazards

#### Canada – WHMIS

Key:

#### not controlled under WHMIS

**B 2** – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

**D 1** – Immediately Toxic, **D 2** – Chronic Toxicity

**C** – Oxidising Substance, **E** – Corrosive, **F** – Reactive Substance

#### U.S.A. – HMIS

Key:

#### Health – 0, Fire – 1, Reactivity – 0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

### 3. COMPOSITION

	%	TWAEV / TLV mg/m <sup>3</sup>	LD <sub>50</sub> (mg/kg) ORAL	LD <sub>50</sub> (mg/kg) SKIN	LC <sub>50</sub> ppm INHALATION
Dipropylene Glycol n-Butyl Ether	100%	not listed	1475	5340	>2040

### 4. FIRST AID

SKIN:	Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION:	Remove from contaminated area promptly. <b>CAUTION: Rescuer must not endanger himself!</b> If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION:	Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

*Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.*

### 5. FIRE FIGHTING & FLAMMABILITY

Flash Point	100°C / 213°F (Setaflash, closed cup) – also reported as 111°C / 231°F
Autoignition Temperature	189°C / 372°F and 194°C / 381°F
Flammable Limits	0.6% – 20.4% (at elevated temperatures – 145°C & 180°C)
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Firefighting Precautions	foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water – water jet spreads flames; firefighters must wear SCBA
Static Charge Accumulation	probably cannot accumulate a static charge on agitation or pumping

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## 6. ACCIDENTAL RELEASE MEASURES

Leak Precaution    dyke to control spillage and prevent environmental contamination  
 Handling Spill      ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep,  
                                  shovel & store in closed containers for recycling or disposal

## 7. HANDLING & STORAGE

Store in a cool, dry environment, away from sources of ignition, heat, strong acids and oxidising agents.

This product may react with oxygen in air to form explosive or flammable peroxides; **never distil to dryness**. Ensure that containers are full and tightly sealed. If prolonged storage of a part container is anticipated, flush headspace with dry nitrogen gas prior to sealing. Empty containers may contain a flammable / explosive vapour. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

## 8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV	not listed
ACGIH TLV	not listed
OSHA PEL	not listed
STEL	not listed
Ventilation	no special mechanical ventilation required
Hands	no special protective gloves required; neoprene may be worn – <i>other types may also protect</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	no special protective clothing required

## 9. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless liquid with mild ether odour
Odour Threshold	not known
Vapour Pressure	0.068mmHg / 0.0091kPa (25°C / 77°F)
Evaporation Rate ( <i>Butyl Acetate = 1</i> )	0.006
Vapour Density (air = 1)	6.6
Boiling Range	230°C / 446°F
Freezing Point	below -75°C / -103°F
Specific Gravity	0.911 (25/25°C)
Water Solubility	45 grams per litre (20°C / 68°F)
Also soluble in	most organic solvents, limited solubility in glycols and methanol
Viscosity	4.2centipoise (25°C / 77°F)
pH	none – ( <i>does not liberate hydrogen ions when dissolved</i> )
Conversion Factor	1ppm = 7.77mg/m <sup>3</sup>
Molecular Weight	190grams per mole

## 10. REACTIVITY

Dangerously Reactive With	strong oxidising agents
Also Reactive With	none known
Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

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## 11. TOXICITY

### Effects, Acute Exposure

Skin Contact	little or no effect
Skin Absorption	yes, but no toxic effects likely by this route
Eye Contact	slightly irritating
Inhalation	little to no effect anticipated due to low vapour pressure at ambient temperatures <i>saturation vapour concentration @ 20°C = 90ppm; LC<sub>50</sub> &gt;265ppm</i>
Ingestion	not known – may cause stomach discomfort and diarrhoea

### Effects, Chronic Exposure

General	prolonged exposure may cause drying of skin, leading to dermatitis
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD <sub>50</sub> (oral)	1475-4400mg/kg (rat – 4 tests), 2160mg/kg (mouse)
LD <sub>50</sub> (skin)	5340 & 6488mg/kg (rabbit), <i>Lyondell data &gt;2000mg/kg (rat) – no mortality seen</i>
LC <sub>50</sub> (inhalation)	>2040mg/m <sup>3</sup> /263ppm (rat) – <i>no mortality seen</i>

Considered to exhibit exceptionally irritancy, and other forms of low toxicity – *OECD SIDS Initial Assessment Report November 2003, Propylene Glycol Ethers*: <http://www.chem.unep.ch/irptc/sids/oecdsids/PGEs.pdf>

## 12. ECOLOGICAL INFORMATION

Bioaccumulation	probably not a bioaccumulator due to moderately high water solubility
Biodegradation	one test showed 0% biodegradation in 28 days, another 49% biodegradation under the same test conditions (OECD 301D), both in domestic sewage sludge and another (modified OECD) showed 91% in 28 days and 60% in 10 days*
Abiotic Degradation	not known – no data available
Mobility in soil, water	water soluble; moves readily in soil and water
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish, 96hr)	841mg/litre (Poecilia reticulata)*
LC <sub>50</sub> (Crustacea, 48hr)	>1000mg/litre (Daphnia magna) – <i>only 2 of 20 individuals lost swimming ability after 48hr*</i>
EC <sub>50</sub> (Algæ)	556mg/litre (“green algae”) – <i>predicted from ECOSAR modelling*</i>
EC <sub>100</sub> (Bacteria)	>1.56mg/litre (Salmonella typhimurium)*

\* *OECD SIDS Initial Assessment Report November 2003 – Propylene Glycol Ethers*: <http://www.chem.unep.ch/irptc/sids/oecdsids/PGEs.pdf>

## 13. DISPOSAL

Waste Disposal	<b>do not flush to sewer</b> , recycle solvent if possible, local regulations may permit disposal in sanitary landfill, may be incinerated in approved facility
Containers	<b>Drums</b> should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. <b>Pails</b> must be vented and thoroughly dried prior to crushing and recycling. <b>IBCs</b> (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. <b>Never cut, drill, weld or grind on or near this container, even if empty</b>

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#### **14. TRANSPORT CLASSIFICATION**

Canada TDG	PIN	UN - not regulated for transport
AND	Shipping Name	not regulated for transport
U.S.A. 49 CFR	Class & Packing Group	not regulated for transport
Marine Pollutant		not a marine pollutant
ERAP Required		NO

#### **EMERGENCY INFORMATION**

Canada	Call CANUTEC (collect)	(613) 996-6666
U.S.A.	Call CHEMTREC	(800) 424-9300

#### **15. REGULATIONS**

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

#### **16. OTHER INFORMATION**

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Data from RTECS, HSDB (Haz. Substance Data Base), Cheminfo (CCOHS), IUCLID Datasheets (ESIS – European Chem. Substance Info. System), & others.

Preparation Date: **January 2004** Revision Date: **February 2007, February 2010, February 2013**

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