



5515 North Service Rd. #306
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megaloid.ca



Responsible Care®
Our commitment to sustainability.



RDC
Responsible Distribution Canada
Leaders in Chemicals and Ingredients

1. IDENTIFICATION

Name: Glycol Ether PnB

Synonyms: 1- butoxy-2-propanol; n-butoxypropanol; propylene glycol n-butyl ether

Product Uses: solvent in coatings, printing inks, cleaners, lubricants

Supplier: Megaloid Laboratories Limited

Identifier: 5515 North Service Road # 306
Burlington, ON L7L 6G4

EMERGENCY INFORMATION: Call CHEMTREC - (800) 424-9300
(CCN# 693764)

2. HAZARD IDENTIFICATION

GHS Class <i>(category)</i>	Skin irritant <i>(2)</i>	Eye irritant <i>(2A)</i>	Combustible <i>(4)</i>
Signal Word	WARNING		
Hazard Statements	Causes skin irritation <i>(H315)</i>	Causes serious eye irritation <i>(H319)</i>	Combustible liquid <i>(227)</i> No Pictogram

Hazardous Pictograms



GHS Precautionary Statements for Labelling

Prevention:

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.

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P262,P264	Do not get in eyes or on skin. Wash thoroughly after handling.
P280	Wear eye protection and protective gloves of butyl or "Viton".
Response:	
P302 + P352	IF ON SKIN: Wash with plenty of water.
P313+P332	If skin irritation occurs, get medical advice/attention.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES, rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P370+P378	In case of fire use alcohol-resistant foam to extinguish.
Storage:	
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
Disposal:	
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	CAS No.	%	Other Identifiers
<i>1-butoxy-2-propanol</i>	5131-66-8	90 - 100	EC # 225-878-4

4. FIRST-AID MEASURES

Inhalation

Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.

Skin Contact

Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.

Eye Contact

Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.

Ingestion

Give plenty of water to dilute product. Do not induce vomiting. Keep victim quiet. If vomiting occurs,

lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Most important symptoms and effects, both acute and delayed

Causes skin irritation

Causes serious eye irritation

Notes to physician

Treat symptomatically

First-aid Comments

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 MEASURES

Suitable Extinguishing Media

Foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet spreads flames.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments.

Special Protective Equipment and Precautions for Fire-fighters

Firefighters must wear SCBA Full Bunker Gear.

Static Charge Accumulation

Static Charge Accumulation - not known – *in general, glycol ethers have high enough electrical conductivity to prevent this*

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Restrict access to area until completion of cleanup. Ensure cleanup is conducted by trained personnel only. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Ventilate area. Extinguish or remove all ignition sources. Notify government occupational health and safety and environmental authorities. Eliminate all ignition sources if safe to do so.

Methods and materials for containment and cleaning up

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 & pick up using plastic or aluminum shovel, & store in closed containers for recycling or disposal.

Environmental Precautions

It is good practice to prevent releases into the environment. Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

7. HANDLING & STORAGE

Precautions for Safe Handling

Product may react with oxygen in the air to form explosive or flammable peroxides. Although this product has a lower tendency to peroxidise than other glycol ethers, 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.

Avoid breathing product vapour. If product is handled hot, use a sealed apparatus to prevent vapour escape into the workplace. Never cut, drill, weld or grind on or near this container. Avoid contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

Conditions for Safe Storage

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

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV Not listed
AGGIH TLV Not listed
OSHA PEL Not listed

Ontario STEV Not listed
ACGIH STEL Not listed
OSHA STEL Not listed

Ventilation	no special mechanical ventilation required; if handled hot, sealed apparatus should be used to contain vapour
Hands	butyl or "Viton" gloves – <i>consult supplier to confirm suitability</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	butyl or "Viton" apron, long sleeves & boots should be worn if splashing is possible

9. PHYSICAL & CHEMICAL PROPERTIES

Odour & Appearance	clear, colourless, liquid with mild pleasant ether odour
Odour threshold	not known
pH	none – (does not liberate hydrogen ions when dissolved)

Melting point/Freezing point	-80oC / -112oF
Initial boiling point/boiling range	171oC / 340oF
Flash point	62oC / 144oF (closed cup, Lyondell); 63oC / 145oF (Dow)
Evaporation rate (<i>Butyl Acetate = 1</i>)	0.08
Flammability (solid; gas)	No data available
Lower flammable/explosive limit	1.1%
Upper flammable/explosive limit	15%
Vapour pressure	1.05 mmHg at 25 °C Literature
Vapour density (<i>air = 1</i>)	4.6
Relative density (<i>water = 1</i>)	0.878 at 25 °C / 25 °C ASTM D891
Water Solubility	52 grams per litre
Partition coefficient – n-octanol/water	Log Pow: 1.2 Measured
Auto ignition temperature	260oC / 500oF
Decomposition temperature	not known – no decomposition below the Autoignition Temperature
Viscosity	2.8 centipoise (25oC / 77oF)

10. STABILITY AND REACTIVITY

Reactivity

Dangerously Reactive With - strong oxidising agents; strong acids, epoxides, aldehydes
Also Reactive With - alkali metals, alkaline earth metals; metal hydrides release hydrogen gas & a strong alkali; attacks some elastomers (eg: PVC, polyurethane)

Chemical Stability

Stable; will not polymerize

Possibility of Hazardous Reactions

Polymerization will not occur.

Conditions to avoid

Oxidization may occur at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials

Strong oxidising agents; strong acids, epoxides

Hazardous decomposition products

Decomposes in Presence of - oxygen – Glycol Ethers tend to form explosive peroxides on prolonged contact with air

Decomposition Products - PnB appears less prone to peroxidation than other glycol ethers

Sensitive to Mechanical Impact

No

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	
Skin Contact	moderate skin irritant; 6 of 7 studies reported that PnB is irritating to rabbit skin
Skin Absorption	yes, however, total body immersion apart, no toxic effects are likely by this route
Eye Contact	moderate or severe eye irritant in animal tests; however, just 1 of 4 studies reported eye irritancy
Inhalation	does not readily form a vapour unless temperature is raised; vapour not irritating; no central nervous effects expected at ambient temperature
Ingestion	not known; ingestion could cause dizziness, drowsiness, nausea – <i>not a route of industrial exposure</i>
LD₅₀ (oral)	2500, 2940, 3300, 4975, 5200 & 5230mg/kg (rat)
LD₅₀ (skin)	1340, 1400 & 3130mg/kg (rabbit) & >2000mg/kg (rabbit) – <i>no mortality at 2000mg/kg</i>
LC₅₀ (inhalation)	>651ppm (rat) – <i>rats exposed to 600ppm for 31 days, 7 hr/day showed no ill effects</i> rats exposed to air saturated with PnB at room temperature showed no ill effects

11. TOXICITY, CONTINUED

Effects, Chronic Exposure

General - prolonged exposure may cause dermatitis, although no cases have been reported

Sensitising - not a sensitiser in humans or animals

Carcinogen - not considered a carcinogen in humans or animals. IARC: Not specifically listed. ACGIH®: Not specifically designated. NTP: Not specifically listed. OSHA: Not specifically listed.

Key to Abbreviations - ACGIH® = American Conference of Governmental Industrial Hygienists. IARC = International Agency for Research on Cancer. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration.

Reproductive Effect - no known effect in humans or animals. NOAEL is 300ppm for parental toxicity; any reproductive effects (@1000ppm) seem to follow from this

Mutagen - no known effect on humans or in animals (5 of 5 reports); no teratogenic effects to 900mg/kg/day (skin)

Synergistic with - not known

12. ECOLOGICAL INFORMATION

Bioaccumulation	rapidly eliminated; not a bioaccumulator; biological ½-life unknown
Biodegradation	degrades readily in the presence of oxygen; 67% ² , 84% ² and >90% in 28 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 4-5hr
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC₅₀ (Fish, 96hr)	560-1000mg/litre (Poecilia reticulata), 1060mg/litre (Pimephelas promelas)
EC₅₀ (Crustacea, 48hr)	1436mg/litre (Daphnia magna)
EC₅₀ (Algae)	>1000mg/litre (Pseudokirchnerella subcapitata)
EC₁₀ (Bacteria)	>1000 & 1303mg/litre (domestic sewage sludge), >5000mg/litre (Salmonella typhimurium)

13. DISPOSAL

Waste Disposal

Do not flush to sewer, recycle solvent if possible, local regulations may permit disposal in sanitary landfill, may be incinerated in approved facility after mixing with a suitable flammable waste

Containers

Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.

Pails must be vented and thoroughly dried prior to crushing and recycling.

IBCs (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.

***Never cut, drill, weld or grind on or near this container,
even if empty***

14. TRANSPORT INFORMATION

Canada TDG		Not regulated for transport	
U.S.A. 49 CFR	UN / PIN # Shipping Name	NA1993 Combustible Liquid n.o.s. (Propylene Glycol Monobutyl Ether)	
	Class & Packing Group	Combustible Liquid, PG III	

Marine Pollutant	Not a marine pollutant	
ERAP Required	No	
Reportable Quantity (RQ – USA only)	None	

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation. - Material is not regulated for ground transportation within the US if shipped in non-bulk packages.

15. REGULATORY INFORMATION

Canada DSL	On Inventory
U.S.A. TSCA	On Inventory
Europe EINECS	On Inventory

Canada Regulations:

CEPA - National Pollutant Release Inventory (NPRI)
Part 5.

U.S.A. Regulations:

SARA 302/304 - This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312 - Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

SARA 311/312 - Physical Hazards - Flammable liquids
Health Hazards - Skin irritation, Eye irritation

SARA 313 - This product contains no known chemicals regulated under SARA 313.

US State Regulations

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with

The applicable state(s):

Pennsylvania - Listed

New Jersey – Listed

Massachusetts - Listed

California Proposition 65 - This material is not known to contain a chemical substance known to the State of California to cause cancer, reproductive, or developmental toxicity under California Proposition 65.

International Regulations:

International Inventories

Listed on the chemical inventories of the following countries or qualifies for an exemption:

Australia (AICS)

China (IECSC)

Japan (ENCS)

Korea (KECI)

New Zealand (NZIoC)

Philippines (PICCS)

Taiwan (TCSCA)

16. OTHER INFORMATION

NFPA RATING	Health 1	Flammability 2	Instability 0
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Prepared for Megaloid Laboratories by Rob Cangiano
 Preparation Date: December 2003
 Revision Dates: December 2006, December 2009, December 2012, August 2015, August 2018, October 2019

Key to Abbreviations	<p>ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances</p>
References	<p>CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA (“BIOVIA”). Available from Canadian Centre for Occupational Health and Safety (CCOHS).</p>
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