1. PRODUCT IDENTIFICATION

Name: Glycol Ether DPnB
Synonyms: 1-(2-butoxy-1-methylethoxy)-2-propanol; n-butoxypropoxypropanol; dipropylene glycol n-butyl ether
CAS# 29911-28-2; alternate CAS# 35884-42-5
Product Uses: solvent

Supplier Identifier: Megaloid Laboratories Limited
5515 North Service Road, Suite 306
Burlington, Ontario, Canada
L7L 6G4
Phone: 905-337-7411 / Fax: 905-337-1686

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

2. HAZARDS

<table>
<thead>
<tr>
<th>GHS Class (category)</th>
<th>Not Hazardous</th>
<th>Label Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Word</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Hazard Statements</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

GHS Precautionary Statements for Labelling

No Precautionary Statements

3. COMPOSITION

<table>
<thead>
<tr>
<th>Chemical Name:</th>
<th>CAS No.</th>
<th>%</th>
<th>Other Identifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene Glycol n-Butyl Ether</td>
<td>29911-28-2</td>
<td>100</td>
<td>EC # 249-951-5</td>
</tr>
</tbody>
</table>

4. FIRST AID

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

THIS INFORMATION IS PRESENTED FOR YOUR CONSIDERATION IN THE BELIEF THAT IT IS ACCURATE AND RELIABLE; HOWEVER, NO WARRANTY EITHER EXPRESSED OR IMPLIED IS MADE AND NO FREEDOM FROM LIABILITY FROM PATENTS, TRADEMARKS, OR OTHER LIMITATIONS SHOULD BE INFERRED.
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 (NOTE below). Keep victim quiet. If vomiting occurs, lower victim’s head below hips to prevent inhalation of vomited material. Seek medical help promptly.

**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 & FLAMMABILITY

Extinguishing Media
**Suitable Extinguishing Media**
Foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet spreads flames

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

Special Protective Equipment and Precautions for Fire-fighters
Firefighters must wear SCBA. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

Static Charge Accumulation
Probably cannot accumulate a static charge on agitation or pumping

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. Wear adequate personal protective equipment. Ventilate area. Extinguish or remove all ignition sources. Notify government occupational health and safety and environmental authorities.

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.

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 aluminium shovel, & store in closed containers for recycling or disposal.

Other Information
Report spills to local health, safety and environmental authorities, as required.
7. HANDLING & STORAGE

Precautions for Safe Handling
This product may react with oxygen in air to form explosive or flammable peroxides; never distil to dryness. Keep containers full & 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 vapour. Always ensure that containers – empty or full – are tightly sealed unless in use.

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

Conditions for Safe Storage
Store & use in a cool, dry environment, away from sources of ignition & oxidizing agents.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Ontario TWAEV</th>
<th>not listed</th>
<th>Ontario STEV</th>
<th>not listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TLV</td>
<td>not listed</td>
<td>ACGIH STEL</td>
<td>not listed</td>
</tr>
<tr>
<td>OSHA PEL</td>
<td>not listed</td>
<td>OSHA STEL</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Ventilation  
No special mechanical ventilation required

Hands  
No special gloves required; neoprene gloves are resistant – other types may also protect

Eyes  
Safety glasses with side shields – always protect the eyes

Clothing  
No special protective clothing required

Appropriate 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.

9. PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Clear colourless liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour</td>
<td>mild ether odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>not known</td>
</tr>
<tr>
<td>pH</td>
<td>none – (does not liberate hydrogen ions when dissolved)</td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>below -75°C / -103°F</td>
</tr>
<tr>
<td>Initial Boiling Point/Range</td>
<td>230°C / 446°F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>100°C / 213°F (Setaflash, closed cup) – also reported as 111°C / 231°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>0.006 (Butyl Acetate =1)</td>
</tr>
<tr>
<td>Flammability ( Solid, Gas)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Upper/Lower Flammability or Explosive Limit</td>
<td>0.6% – 20.4% (at elevated temperatures – 145°C &amp; 180°C)</td>
</tr>
</tbody>
</table>
Vapour Pressure  0.068mmHg / 0.0091kPa (25° C / 77° F)

Vapour Density (air = 1)  6.6

Specific Gravity  0.911 (25/25°C)

Water Solubility  45 grams/litre (20° C / 68° F)

Partition Coefficient, n-Octanol/Water (Log Kow)  1.523

Auto-ignition Temperature  189° C / 372° F and 194° C / 381° F

Conversion Factor  1 ppm = 7.77 mg/m³

Viscosity  4.2 centipoise (25° C / 77° F)

Physical State  Liquid

Molecular Weight  190 grams per mole

Molecular Formula  C10-H22-O3

10. REACTIVITY

Dangerously Reactive with strong oxidising agents.
Also Reactive with: none known

Chemical Stability
Stable; will not polymerize

 Decomposes in Presence of
Not known

Decomposition Products
None apart from Hazardous Combustion Products

Sensitive to Mechanical Impact
No

11. TOXICITY

<table>
<thead>
<tr>
<th>Acute Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 (oral)</td>
</tr>
<tr>
<td>LD50 (skin)</td>
</tr>
<tr>
<td>LC50 (inhalation)</td>
</tr>
</tbody>
</table>

Skin Corrosion/Irritation
Little or no effect; considered “slightly irritating” by several sources

Serious Eye Damage/Irritation
Slightly irritating
STOT (Specific Target Organ Toxicity) - Single Exposure

**Inhalation**
Little to no effect anticipated due to low vapour pressure at ambient temperatures
Saturation vapour concentration @ 20°C = 90ppm; LC$_{50}$ > 265ppm

**Skin Absorption**
Yes, but no toxic effects likely by this route.

**Ingestion**
Not known – may cause stomach discomfort and diarrhoea.

STOT (Specific Target Organ Toxicity) - Repeated Exposure
Prolonged exposure may cause drying of skin, leading to dermatitis.

**Respiratory and/or Skin Sensitization**
Not known to be a respiratory sensitizer.

**Carcinogenicity**
Not considered a carcinogen in humans or animals – NOAEL > 11,070mg/m$^3$, IARC: Not specifically listed. ACGIH®: Not specifically designated. NTP: Not specifically listed. OSHA: Not specifically listed.

**Reproductive Toxicity**

**Sexual Function and Fertility**
No known effect in humans or animals

**Germ Cell Mutagenicity**
No known effect in humans or animals

12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Bioaccumulation</th>
<th>probably not a bioaccumulator due to moderately high water solubility</th>
</tr>
</thead>
</table>

**Biodegradation** -
one test showed 0% biodegradation in 28 days, another 49% biodegradation under the same test conditions (OECD 301D), both in domestic sewage sludge; another (modified OECD) showed 91% in 28 days & 60% in 10 days for “ready biodegradability”

**Abiotic Degradation** -
estimated ½-life in air 2.6 hours

<table>
<thead>
<tr>
<th>Mobility in soil, water</th>
<th>water soluble; moves readily in soil and water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity</td>
<td></td>
</tr>
<tr>
<td>LC50 (Fish, 96hr)</td>
<td>841mg/litre (Poecilia reticulata)</td>
</tr>
<tr>
<td>EC50 (Crustacea, 48hr)</td>
<td>&gt; 1000mg/litre (Daphnia magna) – only 2 of 20 individuals lost swimming ability after 48hr</td>
</tr>
<tr>
<td>EC50 (Algae)</td>
<td>556mg/litre (“green algae”) – predicted from ECOSAR modelling</td>
</tr>
<tr>
<td>EC100 (Bacteria)</td>
<td>&gt; 1.56mg/litre (Salmonella typhimurium)</td>
</tr>
</tbody>
</table>

13. DISPOSAL

**Water Disposal**
Do not flush to sewer, recycle solvent if possible, may be incinerated in approved facility

**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 CLASSIFICATION

<table>
<thead>
<tr>
<th>Canada TDG AND U.S.A. 49 CFR</th>
<th>PIN</th>
<th>Shipping Name Class &amp; Packing Group</th>
<th>Not regulated for transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene Glycol n-Butyl Ether</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marine Pollutant ERAP Required Reportable Quantity E R G No.</th>
<th>Not a Marine Pollutant</th>
<th>NO</th>
<th>NO</th>
<th>NO</th>
</tr>
</thead>
</table>

**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.

### 15. REGULATIONS

<table>
<thead>
<tr>
<th>Canada DSL</th>
<th>U.S.A. TSCA</th>
<th>Europe EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Inventory</td>
<td>On Inventory</td>
<td>On Inventory</td>
</tr>
</tbody>
</table>

**Canadian Regulations**

**CEPA - National Pollutant Release Inventory (NPRI)**

Not specifically listed.

**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:

**Health Hazards**

Specific target organ systemic toxicity - single exposure

**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
16. OTHER INFORMATION

NFPA RATING

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Prepared for: Megaloid Laboratories Limited  
by: Richard Koscher
Preparation Date: January 2004

Key to Abbreviations
ACGIH® = American Conference of Governmental Industrial Hygienists  
AIHA® = AIHA® Guideline Foundation  
HSDB® = Hazardous Substances Data Bank  
IARC = International Agency for Research on Cancer  
NFPA = National Fire Protection Association  
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

References
CHEMINFO database. 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).

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