

Safety Data Sheet (SDS)

Glycol Ether PNB

Issue date 04/19/2017

Reviewed on 10/08/2018

1. Identification

- **Product Identifier**
- **Name of the product:** Glycol Ether PNB
- **Recommended Use:** Industrial applications
- **CAS No:** 5131-66-8

- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Ramsay Browne Chemical & Company
PO Box 6425
Moraga, CA 94570
General Number: (925) 280-1661
- **Emergency telephone number: (925) 280-1661**

2. Hazard(s) Identification



- **Classification of substance or mixture:**
- **Product definition:** Substance
- **Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008**
- Flammable liquid – Category 4 [H227]
- Skin irritation – Category 2 [H315]
- Eye irritation – Category 2A [H319]

- **Signal Word:** Warning

- **Hazard statements**
- **H227** Combustible liquid
- **H315** Causes skin irritation
- **H319** Causes serious eye irritation

- **Precautionary statements:**
- **Prevention:**
- **P210** Keep away from heat, sparks, open flame and hot surfaces. No smoking.

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2. Hazard(s) Identification (continued)

- **P264** Wash hands and other skin areas exposed to material thoroughly after handling.
- **P280** Wear protective gloves, protective clothing and eye protection.

- **Response:**
- **P301+P353** IF ON SKIN: Wash with plenty of soap and water.
- **P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P321** Specific treatment: Seek medical attention if you feel unwell. Refer to Section 4 of this SDS.
- **P332+P337+P313** If skin irritation occurs or if eye irritation persists. Get medical attention.
- **P362** Take off contaminated clothing and wash before reuse.
- **P370+P378** IN CASE OF FIRE: Use water fog or spray, carbon dioxide, foam or dry chemical for extinguishing.

- **Storage:**
- **P403+P235** Store in a well-ventilated place. Keep cool.

- **Disposal:**
- **P501** Dispose of contents and containers in accordance with national and local regulations.

3. Composition / Information on ingredients

CAS #	Percentage	Chemical Name
5131-66-8	>95.0	Butoxypropanol
15821-83-7	>5.0	Butoxy-1-propanol

There are no ingredients present in this product which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First-aid measures

- **Description of first aid measures:**
- **Inhalation:** If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If irritation persists or if the victim feels unwell, seek medical attention.
- **Eyes:** Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and

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4. First-aid measures (continued)

easy to do, after first 2 minutes and continue rinsing. If irritation persists seek medical advice, preferably from an ophthalmologist.

- **Skin:** Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water and continue rinsing. Wash contaminated clothing and shoes thoroughly before reuse. If irritation persists, seek medical attention.
- **Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures, if present. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of material into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek medical attention if the victim feels unwell or if a large quantity of material has been swallowed.
- **Most important symptoms and effects, both acute and delayed:**
- **Eyes:** Causes severe eye irritation with inflammation, pain and tearing. May cause corneal injury. Vapor may cause eye irritation or corneal injury.
- **Skin:** May cause moderate skin irritation with localized redness, itching and discomfort. Prolonged contact may cause defatting of the skin and dermatitis.
- **Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures, if present. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. TO prevent aspiration of material into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek medical attention if the victim feels unwell or if a large quantity of material has been swallowed.
- **Indication of any immediate medical attention and special treatment needed:** Doctor and Hospital personnel – treat symptomatically and supportively.

5. Emergency response procedures

- **Extinguishing media:**
- **Suitable methods of extinction:** Use equipment media such as water spray or fog, carbon dioxide, foam and dry chemical.
- **Unsuitable methods of extinction:** Water jets or streams may spread the fire or cause violent steam eruptions.
- **Special hazards arising from the substance or mixture:** Combustible liquid. Vapors are heavier than air and can travel along the ground to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Exposure to ignition sources can ignite vapors. Causing a flash fire. Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

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5. Emergency response procedures (continued)

- **Explosion hazards:** Avoid sources of ignition. Violent steam generation may occur upon application of direct water stream to hot liquids.
- **Advice for firefighters:** Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control runoff water to prevent environmental contamination.

6. Handling and storage

- **Personal precautions, protective equipment and emergency procedures:** Evacuate non-essential personnel. Ventilate the area. Remove all sources of ignition. Wear appropriate protective clothing and equipment designated in Section 8.
- **Environmental precautions:** Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.
- **Methods and materials for containment and cleaning up:** Clean up spills immediately. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material using non-sparking tools and place into approved container(s) for proper disposal. Observe possible material restrictions (Sections 7 and 10). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of via a licensed waste disposal contractor.
- **Reference to other sections:** For indications about waste treatment, see Section 13.

7. Physical and chemical properties

- **Precautions for safe handling:**
- Wear all appropriate personal protective equipment specified in Section 8. Do not get in eyes or on skin or clothing. Do not inhale mist or vapor. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator.
- **Advice on protection against fire and explosion:** Avoid sources of ignition. Vapors may form an explosive mixture with air, especially in confined spaces.
- **Conditions for safe storage, including any incompatibilities:** Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10), food and drink. Keep away from heat and ignition sources. Transfer only to approved containers having correct labeling. Keep containers tightly closed when not in use. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent spillage. Containers are hazardous when empty as they contain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children.

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7. Physical and chemical properties (continued)

- **Specific end uses:** Apart from the uses mentioned in Section 1, no other specific uses are stipulated.

8. Exposure Controls / Personal Protection

- **Control parameters:** Contains no substances with occupational exposure limits.
- Exposure controls:
- **Engineering measures:** Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable.
- **Individual protection measures:** Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handles. The chemical resistance of the protective equipment should be enquired at the representative supplier.
- **Hygiene measures:** Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventative skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.
- **Eye/face protection:** Wear safety glasses with unperforated side shields or protective splash goggles during use.
- **Hand protection:** Wear gloves recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.
- **Skin protection:** Wear protective clothing. Wear protective boots if the situation requires.
- **Respiratory protection:** Always use an approved respirator when vapor/aerosols are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.
- **Environmental exposure controls:** Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

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9. Physical and Chemical Properties

- **Appearance:** Clear, colorless liquid
- **Odor:** Ether-like
- **Odor Threshold:** No data available
- **Chemical Formula:** C₇H₁₆O₂
- **pH:** No data available
- **Freezing/Melting Point, Range:** < -80°C (< -112°F)
- **Initial Boiling Point:** 171°C (340°F) @ 760 mm Hg
- **Evaporation Rate:** No data available
- **Flammability (solid, gas):** Not applicable
- **Flash Point:** 63°C (145°F), closed cup
- **Autoignition Temperature:** 260°C (500°F)
- **Decomposition Temperature:** No data available
- **Lower Explosive Limit (LEL):** 1.1% (v)
- **Upper Explosive Limit (UEL):** 8.4% (v)
- **Vapor Pressure:** 0.85 mm Hg @ 20°C
- **Vapor Density:** 4.6 (Air=1) literature
- **Specific Gravity:** 0.878 @ 25°C
- **Viscosity:** 2.8 mPa.s @ 20°C
- **Solubility in Water:** 5.5% @ 25°C literature
- **Partition Coefficient: n-octanol/water:** low Pow = 0.98
- **Oxidizing Properties:** Not applicable
- **Explosive Properties:** Not applicable
- **Volatiles by Weight @ 21°C:** 100%

10. Other information

- **Reactivity:** No special reactivity has been reported.
- **Chemical stability:** Stable under recommended storage conditions.
- **Possibility of hazardous reactions:** Hazardous polymerization will not occur.
- **Conditions to avoid:** Temperature extremes, sources of ignition, contact with incompatible materials.
- **Incompatible materials:** Strong bases, strong acids, strong oxidizing agents.
- **Hazardous decomposition products:** Thermal decomposition products include oxides of carbon, aldehydes, ketones, organic acids.

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11. Toxicological Information

- **Information on toxicological effects:**
- **Acute Oral Toxicity:** LD50, rat - >3,300 mg/kg (male and female)
- **Acute inhalation toxicity:** LC50, rat - 3.5 mg/l, 4 h; No deaths occurred at this concentration.
- **Acute dermal toxicity:** LD50, rat - >2,000 mg/kg (male and female)
- **Skin irritation:** Causes skin irritation.
- **Eye irritation:** Causes serious eye irritation.
- **Sensitization:** No data available.
- **Genotoxicity in vitro:** No data available
- **Mutagenicity:** No data available
- **Specific organ toxicity – single exposure:** No data available
- **Specific organ toxicity – repeated exposure:** No data available
- **Aspiration hazard:** No data available

No component of this product present at levels greater than or equal to the 0.01% threshold (de minimis) is identified as a probable, possible, potential or confirmed carcinogen by IARC, ACGIH, NTP or OSHA.

No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

12. Ecological Information

- **Toxicity:** This material is practically non-toxic to aquatic organisms on an acute basis.
- **Acute and prolonged toxicity to fish:** LC50 – *Poecilia reticulata* (Guppy), 96 h; >560 – 1,000 mg/l
- **Toxicity to aquatic invertebrates:** LC50 – *Daphnia magna* (Water flea), 48 h; 1,000 mg/l
- **Toxicity to aquatic plants:** ErC50 – *Pseudokirchneriella subcapitata* (green algae), 72 h; >1,000 mg/l (growth rate inhibition)
- Toxicity to microorganisms: IC50 – Bacteria, 3 h >1,000 mg/l
- **Persistence and degradability:** This material is readily biodegradable.
- **Bioaccumulation potential:** This material has low potential to bioaccumulate.
- **Mobility in soil:** Potential for mobility in soil is very high.
- **Results of PBT and vPvB assessment:** No data available.
- **Other adverse effects:** Do not allow materials to run into surface waters, wastewater or soil. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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13. Disposal Considerations

- **Waste treatment methods:**
- **Methods of disposal:** The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
- **RCRA P-Series:** No listing
- **RCRA U-Series:** No listing

14. Transport Information

- **Note:** Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100-177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.
- **US DOT (Domestic Ground Transportation)**
- **Proper Shipping Name:** Combustible liquid, N.o.s. (Butoxypropanol)
- **Hazard Class:** Comb liq
- **UN/NA:** NA1993
- **Packing Group:** III
- **NAERG:** Guide #128
- **Packaging Authorization:** Non-Bulk – 49 CFR 173.202; Bulk – 173.242
- **Packaging Exceptions:** 49 CFR 173.150
- **IMO/IMDG (Water Transportation):** Not regulated for transport: Consult IMO regulations before transporting ocean bulk.
- **ICAO/IATA (Air Transportation):** Not regulated for transport.
- **RID/ADR (Rail Transportation):** Not regulated for transport.

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15. Regulatory Information

- **Safety, health and environmental regulations/legislation specific for substance or mixture**
- **U.S. Federal Regulations:**
- **OSHA Hazard Communication Standard:** This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.
- **OSHA Process Safety Management Standard:** This product is not regulated under OSHA PSM Standard 29 CFR 1910.119
- **EPA Risk Management Planning Standard:** This product is not regulated under EPA RMP Standard (EMP) 40 CFR Part 68
- **EPA Federal Insecticide, Fungicide and Rodenticide Act:** This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.
- **Toxic Substance Control Act (TSCA) Inventory:** All of the components of this product are listed on the TSCA Inventory. It is not subject to TSCA 12(b) Export Notification.
- **Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2) and Chemical Code Number:** No listing.
- **Drug Enforcement Administration (DEA) List s1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12©) and Code Number:** No listing.
- **Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals:** No listing.

- **Superfund Amendments and Reauthorization Act (SARA):**
- **SARA Section 311/312 Hazard Categories:** Fire Hazard, Acute Health Hazard.
- **SARA 313 Information:** Glycol Ethers (SARA code N230) are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.
- **SARA 302/314 Extremely Hazardous Substance:** No components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.
- **SARA 302/304 Emergency Planning & Notification:** No components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.
- **Comprehensive Response Compensation and Liability Act (CERCLA):** This product contains the following CERCLA reportable substance(s):
 - Glycol Ethers – There is no RQ assigned to this broad class, although the class is a CERCLA hazardous substances. Refer to 50 Federal Register 13456 (April 4, 1985).
- **Clean Air Act (CAA):** Glycol Ethers (EDF-109) are listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112(b). This product does not contain any Class 1 Ozone depleters. This product does not contain any Class 2 Ozone depleters.

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15. Regulatory Information (continued)

- **Clean Water Act (CWA):** Glycol Ethers (EDF-109) are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
- **U.S. State Regulations:**
- **California Prop. 65, Safe Drinking Water and Toxic Enforcement Act of 1986:** this product contains no chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.
- **Other U.S. State Inventories:** None of the components of this product are listed on any State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants Lists.
- **Canada:**
- **WHMIS Hazard Symbol and Classification:**
- B3 – Flammable liquid with flash points greater than 38°C (100°F) but inferior to 93°C (199.4°F).
- D2B – Toxic material causing other toxic effects, eye irritation and eye irritation in animals.
- **Canadian National Pollutant Release Inventory (NPRI):** None of the chemicals in this product are listed on the NPRI.
- **European Economic Community:**
- **WGK, Germany (water danger/protection):** 1 (low hazard to waters)
- **Global Chemical Inventory Lists:**

Country	Inventory Name	Inventory Listing
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

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15. Regulatory Information (continued)

Yes = All components of this product are in compliance with the inventory requirements administered by the governing country.

No = One or more components of this product are not on the inventory or are exempt from listing.

- **Chemical safety assessment:** For this product a chemical safety assessment was not carried out.

16. Other Information

Acetic Acid 80%	
HEALTH	1
FIRE	2
REACTIVITY	0
PERSONAL PROTECTION	C

HMIS Hazard Rating Legend:

0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe, * = Chronic Health Hazard

Abbreviation Key:

ACGIH American Conference of Governmental Industrial Hygienists

ADR Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)

CAS Chemical Abstract Services

CFR Code of Federal Regulations

DOT Department of Transportation

EMS Guide Emergency Response Procedures for Ships Carrying Dangerous Goods

EPA Environmental Protection Agency

ERG Emergency Response Guide Book

FDA Food and Drug Administration

GHS Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

HCS Hazard Communication Standard

IARC International Agency for Research on Cancer

IATA International Air Transport Association half maximal

ICAO International Civil Aviation Organization

IDLH Immediately Dangerous to Life and Health

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16. Other Information (continued)

IMDG International Maritime Dangerous Goods
IMO International Maritime Organization
mppcf Millions of Particles Per Cubic Foot
NA North America
NAERG North American Emergency Response Guide Book
NIOSH National Institute for Occupational Safety
NTP National Toxicology Program
OSHA Occupational Safety and Health Administration
PBT Persistent, Bioaccumulating and Toxic
PEL Permissible exposure limit
PMCC Pensky-Martens Closed Cup
ppm Parts Per Million
RCRA Resource Conservation and Recovery Act
RID Dangerous Goods by Rail
RQ Reportable Quantity
TCC/Tag Tagliabue Closed Cup
TLV Threshold Limit Value
TSCA Toxic Substance Control Act
TWA Time-weighted Average
UN United Nations
VOC Volatile Organic Compounds
vPvB Very Persistent and Very Bioaccumulating
WHMIS Workplace Hazardous Materials Information System

Disclaimer of Responsibility

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.