



## Propylene Glycol Monomethyl Ether

Chemical Formula:  $\text{CH}_3\text{OCH}_2\text{CHOHCH}_3$

CAS Registry Number: 107-98-2

Molecular Weight: 90.12

### PRODUCT INFORMATION

#### Synonyms:

- Propylene glycol methyl ether(PGME)
- 1-Methoxy-2-propanol
- 1-Methoxy-2-hydroxypropane
- 1-Methoxypropan-2-ol
- 1-Methoxypropanol
- 2-Methoxy-1-methylethanol
- 2-propanol-1-methoxy

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## Physical and Chemical Properties

**Appearance:** Clear, colorless liquid.

**Odor:** Slight ethereal odor.

**Solubility:** Miscible in water.

**Density:** 0.962 @ 20°C/4°C

**pH:** No information found.

**% Volatiles by volume @ 21°C (70°F):** No information found.

**Boiling Point:** 120°C (248°F)

**Melting Point:** -95°C (-139°F)

**Vapor Density (Air=1):** 3.11

**Vapor Pressure (mm Hg):** 11.8 @ 25°C (77°F)

**Evaporation Rate (BuAc=1):** 0.71

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## Stability and Reactivity

### **Stability:**

Stable under ordinary conditions of use and storage.

### **Hazardous Decomposition Products:**

Carbon dioxide and carbon monoxide may form when heated to decomposition.

### **Hazardous Polymerization:**

Will not occur.

### **Incompatibilities:**

Strong oxidizers, strong acids, strong bases, aluminum, and copper. This substance acts as a solvent with many resins, plastics and rubbers.

### **Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## Hazards Identification

### **Emergency Overview**

**WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. MAY BE HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

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Health Rating: 1 - Slight (Life)

Flammability Rating: 2 - Moderate

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate (Life)

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Red (Flammable)

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## Potential Health Effects

### **Inhalation:**

Vapors are irritating to the respiratory tract. Vapors are disagreeable to breathe above 100 ppm because of objectionable odor. Eye, nasal and throat irritation will occur before any central nervous system effects, which occur at 1000 ppm. Headache, dizziness, drowsiness and incoordination may occur.

### **Ingestion:**

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Symptoms may parallel those from inhalation.

### **Skin Contact:**

May cause irritation with redness and pain. May be absorbed through the skin with possible systemic effects.

### **Eye Contact:**

May cause irritation, redness and pain.

### **Chronic Exposure:**

Chronic exposure may damage the liver and kidneys.

### **Aggravation of Pre-existing Conditions:**

No information found.

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## First Aid Measures

### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

### **Ingestion:**

If swallowed, give several glasses of water to drink to dilute. If large amounts were swallowed or symptoms occur, get medical advice. Never give anything by mouth to an unconscious person.

### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

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## Fire Fighting Measures

### **Fire:**

Flash point: 32°C (90°F) CC

Flammable limits in air % by volume:

lcl: 1.6; ucl: 13.8

Flammable Liquid

### **Explosion:**



Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

**Fire Extinguishing Media:**

Dry chemical, foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## **Accidental Release Measures**

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

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## **Handling and Storage**

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

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## **Exposure Controls/Personal Protection**

**Airborne Exposure Limits:**

-ACGIH Threshold Limit Value (TLV):  
100 ppm (TWA), 150 ppm (STEL)

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**



If the exposure limit is exceeded and engineering controls are not feasible, a half-face organic vapor respirator may be worn for up to ten times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## Ecological Information

**Environmental Fate:**

When released into the soil, this material may leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material is not expected to evaporate significantly. When released into water, this material may biodegrade to a moderate extent. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

**Environmental Toxicity:**

No information found.

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## Other Information

**NFPA Ratings:** Health: 1 Flammability: 3 Reactivity: 0

**Label Hazard Warning:**

**WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. MAY BE HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

**Label Precautions:**

Avoid breathing vapor.  
Avoid contact with eyes, skin and clothing.  
Keep away from heat, sparks and flame.  
Keep container closed.  
Wash thoroughly after handling.  
Use only with adequate ventilation.

**Label First Aid:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. If swallowed, give several glasses of water to drink to dilute. If large



amounts were swallowed or symptoms occur, get medical advice. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur.

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