



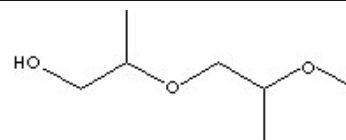
Dipropylene Glycol Methyl Ether

Chemical Formula: CH₃-O-CH₂-CH(CH₃)-O-CH₂-CH(CH₃)-OH

CAS Registry Number: 34590-94-8

Molecular Weight: 148.23

PRODUCT INFORMATION



Synonyms:

- Methoxy Propoxy Propanol
- Methoxypropoxypropanol
- Mixture of Methyl dipropylene glycol
- Oxybispropanol
- Methyl Ether; Bis-(2-Methoxypropyl) ether

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Description

Methyl DIPROXITOL is a colourless, hygroscopic, high boiling liquid with a mild odour. It is miscible in any proportion with water and many organic solvents and has good solvent power for nitrocellulose and dyestuffs.

Typical Properties

Property	Unit	Method	Value
Purity	%m/m	DIN 55689	min. 98.5
Water	%m/m	ASTM D1364	0.05
Density @20°C	kg/L	ASTM D4052	0.953
Cubic Expansion Coefficient @20°C	(10 ⁻⁴)/°C	Calculated	10
Refractive Index @20°C	-	ASTM D1218	1.453
Color	Pt-Co	ASTM D1209	<5
Boiling point	°C	-	191
Relative Evaporation Rate (nBuAc=1)	-	ASTM D3539	0.04
Relative Evaporation Rate (Ether=1)	-	DIN 53170	360
Antoine Constant A # kPa,	°C	-	6.70707
Antoine Constant B # kPa	°C	-	1633.03
Antoine Constant C # kPa	°C	-	161.693
Antoine Constants: Temperature range	°C	-	+50 to +190
Vapor Pressure @20°C	kPa	Calculated	<0.01
Vapor Pressure @50°C	kPa	Calculated	0.10
Saturated Vapor Concentration @20°C	g/m ³	Calculated	<0.5
Flash Point	°C	ASTM D93	79
Auto Ignition Temperature	°C	ASTM E659	205
Explosion Limit: Lower	%v/v	-	1.3
Explosion Limit: Upper	%v/v	-	8.7
Electrical Conductivity @20°C	μS/m	ASTM D4308	10
Dielectric Constant @20°C	-	-	10.5
Freezing Point	°C	-	-83
Surface Tension @20°C	mN/m	-	29
Viscosity @20°C	mPa.s	ASTM D445	4.3
Hildebrand Solubility Parameter	(cal/cm ³) ^½	-	8.7
Hydrogen Bonding Index	-	-	0.0
Fractional Polarity	-	-	0.050
Dilution Ratio: Toluene	-	ASTM D1720	4.2
Dilution Ratio: SBP 100/140	-	ASTM D1720	0.8
Heat of Vaporization @Tboil	kJ/kg	-	306
Heat of Combustion (Net) @25°C	kJ/kg	-	27500
Specific Heat @20°C	kJ/kg/°C	-	2.0



Thermal Conductivity @20°C	W/m/°C	-	0.11
Miscibility @20°C: Solvent in Water	%m/m	-	Complete
Miscibility @20°C: Water in Solvent	%m/m	-	Complete
Azeotrope with Water: Boiling Point	°C	-	99.2
Azeotrope with Water: Solvent Content	%m/m	-	8.0

(#) In the Antoine temperature range, the vapor pressure P (kPa) at temperature T (°C) can be calculated by means of the Antoine equation: $\log P = A - B/(T+C)$

Hazards Identification

Emergency Overview

CAUTION! COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE IRRITATION TO EYES AND RESPIRATORY TRACT. MAY AFFECT CENTRAL NERVOUS SYSTEM.

Health Rating: 2 - Moderate

Flammability Rating: 2 - Moderate

Reactivity Rating: 1 - Slight

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Inhalation of vapors may irritate the respiratory tract. High concentrations may affect the central nervous system. Symptoms may include headache, dizziness.

Ingestion:

Not expected to be a health hazard via ingestion.

Skin Contact:

Not expected to be a health hazard from skin exposure.

Eye Contact:

May cause slight eye irritation with reddening.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

**Ingestion:**

If large amounts are swallowed, give water to drink and seek medical attention. Do not induce vomiting.

Skin Contact:

Not expected to require first aid measures.

Eye Contact:

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

Fire Fighting Measures

Fire:

Flash point: 75°C (167°F) CC

Combustible Liquid and Vapor!

Explosion:

Above the flash point, explosive vapor-air mixtures may be formed. Flammable vapors that are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Flashback along vapor trail may occur.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

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. Both vapor and liquid may travel to source of ignition and flash back.

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!

Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from direct sunlight and any area where the fire hazard may be acute. Store in tightly closed containers (preferably under nitrogen atmosphere). Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet. Separate from oxidizing materials. 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. Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides. Always ensure that no peroxide is present if the liquid has been allowed to evaporate. Positive steps should be taken to reduce any accumulated peroxides to a safe level before concentrating the liquid. 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.



Exposure Controls/Personal Protection

Airborne Exposure Limits:

Dipropylene glycol monomethyl ether:
-OSHA Permissible Exposure Limit (PEL):
100 ppm(TWA) skin

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

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 full facepiece respirator with organic vapor cartridge 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-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other Information

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

Label Hazard Warning:

CAUTION! COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE IRRITATION TO EYES AND RESPIRATORY TRACT. MAY AFFECT CENTRAL NERVOUS SYSTEM.

Label Precautions:

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

Label First Aid:

In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.