

# Dipropylene glycol DME

## Technical Datasheet

### Chemical Characterization

Dipropylene glycol dimethyl ether

CAS-No.: 111109-77-4

ELINCS-No.: 404-640-5

TSCA-No.: 111109-77-4

MITI-No. 7-1321

### Product Description

Dipropylene glycol DME is a colorless liquid with a mild, pleasant odor. It is completely miscible with most common organic solvents. However, it has limited solubility in water.

Due to its chemical stability and the absence of reactive groups, Dipropylene glycol DME can be used as an inert, aprotic reaction medium, e.g. for organic reactions and polymerizations etc. Dipropylene glycol DME is not listed as a Hazardous Air Pollutant, has low toxicity, and offers an alternative to solvents being phased out as a result of the Clean Air Act. It is therefore used as environmentally friendly replacement for NMP (N-methyl pyrrolidone).

Dipropylene glycol DME is used in solvent-based coatings and water-based polyurethane/ isocyanate coating systems e.g. as a coalescing agent or as solvent for the isocyanate prepolymer in 2c-PUDs.

Effective paint and varnish-stripping formulations can be made by the combination of Dipropylene glycol DME with a protic solvent. Due to its chemical inertness, Dipropylene glycol DME may be used in strongly acidic or alkaline industrial cleaning product e.g. for the cleaning of metal surfaces.

Dipropylene glycol DME can be used as a component in formulations designed to clean resin and polymeric-based optical lenses and associated lens molds. Due to its low toxicity it also finds application in cosmetic formulations e.g. nail polish removers. The solvent may be used to align liquid crystals during manufacture and to replace halogenated solvents used to clean

LCDs and printed circuit boards. As an entrainer for azeotropic water removal, Dipropylene glycol DME is used in esterification reactions to yield clear resins. It is also used as cosolvent in aluminum pastes and as a coupling agent for agricultural formulations.

### Storage Advice

Dipropylene glycol DME is supplied in road tankers, steel drums and IBCs. Glycol ethers and their derivatives may form peroxides in the presence of oxygen, and Dipropylene glycol DME may absorb moisture in the presence of air. Therefore, Dipropylene glycol DME is stabilized with 100 mg/kg 2,6-di-tert.-butyl-4-methylphenol (BHT). The product is hygroscopic and must be properly stored in order to prevent water absorption. This can be done by storing the product under a dry nitrogen blanket. If stored in a breathable tank, drying agents such as silica gel should be utilized. For further information please refer to the safety data sheet.

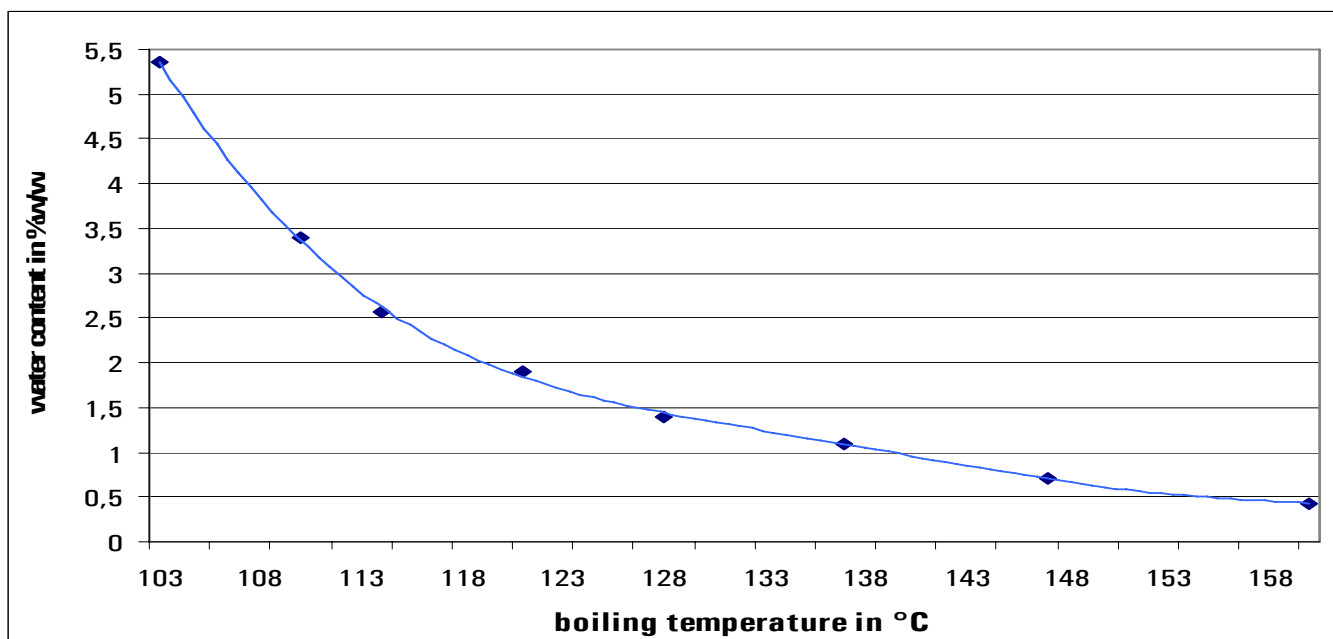
### Azeotropic Mixtures

Dipropylene glycol DME (DPG DME) forms an azeotrope with water.

	composition [% w/w]	boiling point [1013 hPa]
water	38 DPG DME 62 water	98°C

## Dipropylene glycol DME

## Boiling temperature dependent on water content



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molar mass	g/mol	162
boiling point /1013 hPa (DIN 53171)	°C	175
freezing point (DIN 51583)	°C	-80
flash point (DIN 51755)	°C	65
ignition temperature (DIN 51 794)	°C	165
density /20 °C (DIN 51757)	g/cm <sup>3</sup>	0.90
kinematic viscosity (DIN 51562)	mm <sup>2</sup> /s	1,12 (20 °C) 1,36 (10 °C) 1,64 (0 °C)
vapor pressure /20 °C	mbar	0.8
evaporation rate (DIN 53170, Diethylether = 1)		95
surface tension /25 °C	mN/m	26.3
miscibility water in solvent	% w/w	4.5
miscibility solvent in water		35
Hansen solubility parameter	J/cm <sup>3</sup>	$\delta_d$ (Dispersion) 14,9 $\delta_p$ (Polar) 2,1 $\delta_h$ (Hydrogen bonding) 3,8

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