
Methyl glycol

Technical Datasheet

Chemical Characterization

Ethylene glycol monomethylether
1-Hydroxy-2-methoxyethane
2-Methoxyethanol

CAS-No.: 109-86-4

EINECS-No.: 203-713-7

Registrations: EINECS (Europe), TSCA (USA), AICS (Australian),
DSL (Canada), ECL (Korea), PICCS (Philippines), ENCS (Japan),
ASIA-PAC

Product Description

Methyl glycol is a colorless, neutral, weakly liquid with a mild pleasant odor. It is miscible in any ratio with water and the usual organic solvents (except for saturated hydrocarbons, e. g. special boiling point petroleum spirits).

Methyl glycol enters into the typical alcohol reactions like esterification, etherification, oxidation, acetal and alcoholate formation. Therefore it is used as a starting material for syntheses of organic intermediates. Methyl glycol is also used as an antifreeze in aviation fuels for jet aircrafts (about 0.10 - 0.15 % by volume, relative to the fuel). The technical characteristics of methyl glycol enable it to meet the requirements stipulated for the technical Supply Conditions as drawn up in accordance with MIL-DTL-2786G (NATO-Code-Number: S-748) in addition with an antioxidant (Clariant product name: Methyl glycol JFA).

Storage Advices

Glycol ethers and their derivatives tend to form peroxides in the presence of air or oxygen. To prevent the formation of peroxides the product should be stored under an inert nitrogen atmosphere.

Despite the very mild odor of methyl glycol, the general precautionary measures for the handling of solvents must always be observed. For further informations please refer to the safety data sheet.

Storage tanks should be made from norm-steel or stainless steel. Aluminium and other light metals are not suitable due to alcoholate formation with methyl glycol.

We found the following materials suitable.

Pumps: chemistry rotary pumps (made from gray iron, type GG or GS) with slide ring sealing (combination: V2A/hardened graphite).

Flange seal: all elastomers should be tested before use (we recommend [®]Klingerit-ITC).

Azeotropic Mixtures

Methyl glycol forms azeotropes with several common organic solvents and with water; some of them are listed in the following table:

Methyl glycol (wt.-%)	Azeotrope with	(wt.-%)	b.p. (°C) at 1013 mbar
4	2-pentanol	96	119,70
51,2	ethylbenzene	48,8	117,00
48	butylacetate	52	119,45
68	butylether	32	122,00
47,5	chlorbenzene	52,5	119,45
15	cyclohexane	85	77,50
23	heptane	77	92,50
16	isobutylacetate	84	115,50
48	isobutylether	52	115,00
48	octane	52	110,00
62	styrene	38	121,00
25,5	toluene	74,5	106,10
15,3	water	84,7	99,90

Technical Data

molar mass	g/mol	76,1
solidification point (DIN 51583)	°C	-85
boiling range/1013 hPa	°C	123-126
flash point(DIN 51755)	°C	37
ignition temperature (DIN 51794)	°C	325
density/20°C (DIN 51757)	g/cm ³	0,967
vapor density (Luft = 1)		2,63
vapor pressure/20°C	mbar	8,1
kinematic viscosity/20°C (DIN 51562)	mm ² /s	1,71
dielectric constant/20°C (DIN 53483)		16,9
critical density	g/cm ³	0,313
critical temperature	°C	292,2
critical pressure	bar	50,1
dipole moment/25°C	Debye	2,04
surface tension/25°C	mN/m	31,2
refractive number n _D 20 (DIN 51423, part 2)		1,402
heat of evaporation /1013 hPa	kJ/kg	519
evaporation number (DIN 53170, Diethylether = 1)		34
thermal conductivity /20°C	W/mK	0,19
specific heat /20°C	kJ/kg*K	2,30

Physical data

vapor pressure

°C	mbar
0	1,7
10	3,8
20	8,1
40	29,3
60	85,5
80	211
100	455
120	886
124,6	1013

spec. heat

°C	kJ/kg*K
0	2,16
20	2,30
40	2,47
60	2,63
80	2,81
100	3,01
120	3,23

density

°C	g/cm ³
-20	1,0031
0	0,9848
10	0,9756
20	0,9665
40	0,9481
60	0,9296
90	0,9016
120	0,8732

surface tension (σ)

°C	mN/m
25	31,20
30	30,00
40	28,97
50	27,98

This information is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a particular application. Any existing industrial property rights must be observed. The quality of our products is guaranteed under our General Conditions of Sale.

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