



DATASHEET

MPG - USP

PO & DERIVATIVES

U1512

Revised April 2016

MPG-USP is the US Pharmacopoeia compliant grade of monopropylene glycol (MPG). It is a clear, colourless and practically odourless, hygroscopic liquid, completely soluble in water.

MPG-USP is miscible in all proportions with low molecular weight aliphatic alcohols and ketones. It is slightly to moderately soluble in aromatic hydrocarbon solvents and only slightly miscible with aliphatic hydrocarbon solvents.

Other chemical names for MPG-USP are: 1,2-dihydroxypropane; 1,2-propanediol; 1,2-propylene glycol

HO-CH₂-CH(OH)-CH₃

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNIT	VALUE
Purity	USP	% (m/m)	99.5 min
Colour	ASTM E-202	Pt-Co	10 max
Water	USP	% (m/m)	0.2 max
Acidity as Acetic Acid	USP	% (m/m)	0.005 max
Chlorides	USP	mg/kg	1.0 max
Sulphate	USP	mg/kg	60 max
Iron	ASTM E-202	mg/kg	0.5 max
Heavy metals	USP	mg/kg	5.0 max
Molecular weight		g/mol	76.09
Density @ 20°C		kg/m ³	1036
Viscosity @ 20°C		mPa.s	55
Coefficient of cubic expansion @ 20°C		10 ⁻⁴ /°C	6.95
Refractive index @ 20°C			1.4326
Pour point		°C	-59.5
Boiling point		°C	187.4
Flash point		°C	99
Vapour pressure @ 20 °C		kPa	0.0067
Vapour pressure @ 50 °C		kPa	0.0893
Surface tension @ 20°C		mN/m	36
Specific heat @ 20°C		kJ/kg/°C	2.48
Latent heat of vaporization @ 20°C		kJ/kg	976.5
Thermal conductivity @ 20°C		W/m/°C	0.187

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Heat of combustion at 25°C		kJ/kg	23982
Electrical conductivity @ 20°C		μS/m	4.4
Dielectric constant			32.0

All typical physical properties are at 20°C unless stated otherwise. The above typical physical properties are published here as a guide to potential users of the product. A sales specification is published separately.

Application

MPG-USP is used in a wide range of applications in the pharmaceutical industry, the food industry and in cosmetics.

Test Methods

Copies of copyrighted test methods can be obtained from the issuing organisations:

American Society for Testing and Materials (ASTM): www.astm.org

US Pharmacopoeia Inc (USP): www.usp.org

For routine quality control analyses, local test methods may be applied that are different from those mentioned in this datasheet. Such methods have been validated and can be obtained through your local Shell Chemicals company.

Storage and Handling

Advice on the storage and handling of MPG-USP can be found in the CEFIC "Guidelines for Handling and Distribution of Propylene Glycol USP/EP" which is available at www.cefic.org. MPG-USP must be processed within 12 months of shipment date.

Hazard Identification

Low order of acute toxicity by the oral or precutaneous routes. Slightly irritating to the eyes and skin. This product is not in the 'flammable' range, but will burn. Before handling the product refer to the Safety Data Sheet.

PROPERTY	TEST METHOD	UNIT	VALUE
Flash point (PMCC)	ASTM D93	°C	99
Lower explosive limit in air		% (v/v)	2.6
Upper explosive limit in air		% (v/v)	12.6
Auto ignition temperature		°C	421

DISCLAIMER

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