



Data Sheet

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Product Name**MPG - USP****Product Code****U1512****Product Category****Propylene oxide and derivatives****CAS Registry Number**

57-55-6

EINECS Number

200-338-0

Synonym(s)Monopropylene glycol-USP; 1,2-dihydroxypropane;
1,2-propanediol; 1,2-propylene glycol; HO-CH₂-CH₂(OH)-CH₃**Description**

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.

MPG-USP, as produced, meets the volatile organic compound (VOC) exemption criteria and definition of LVP-VOC as established in CARB's Consumer Products Regulation; in the USEPA's National Volatile Organic Compound Emissions Standards for Consumer Products; and in the Model Rule for Consumer Products as adopted by the Ozone Transport Commission (OTC). Due to their low volatility and photochemical reactivity, these LVP-VOCs are fully exempt and non-reportable VOCs in calculations of the VOC contents of regulated consumer product categories.

Sales Specification

Property	Unit	Min	Max	Method
Purity	%m/m	99.5		USP
Water	%m/m		0.2	USP
Acidity as Acetic acid	%m/m		0.005	USP
Specific Gravity @25°C		1.035	1.037	ASTM E202
Color	Pt-Co		10	ASTM E202
Refractive Index @20°C		1.431	1.433	EP
Distillation, IBP	°C	185		ASTM E202
Distillation, DP	°C		189	ASTM E202
Chlorides (as Cl)	mg/kg		1	USP

Iron	mg/kg	0.5	ASTM E202	
Lead	mg/kg	1	FCC	(1)
Heavy Metals	mg/kg	5	USP	
Sulfate	mg/kg	60	USP	
Oxidizing Substances		Pass	EP	
Reducing Substances		Pass	EP	
Residual Solvents		Pass	USP	
Residue on Ignition	mg/kg	70	USP	
Infrared Spectrum		Pass	USP	

(1) Agreed Specification limits - no results reported

Monopropylene Glycol is a specially selected grade meeting the specifications of the European and US Pharmacopoeia (EP and USP) and the Food Chemical Codex (FCC).

Typical Properties of the pure product

Property	Unit	Method	Value
Density @20°C	kg/m ³	-	1036
Cubic Expansion Coefficient @20°C	(10 ⁻⁴)/°C	-	6.95
Refractive Index @20°C	-	-	1.4326
Boiling Point	°C	-	187.4
Vapor Pressure @20°C	kPa	-	0.0067
Vapor Pressure @50°C	kPa	-	0.0893
Flash Point	°C	-	99
Auto Ignition Temperature	°C	-	421
Explosion Limit: Lower	%v/v	-	2.6
Explosion Limit: Upper	%v/v	-	12.6
Electrical Conductivity @20°C	µS/m	-	4.4
Dielectric Constant @20°C	-	-	32.0
Pour Point	°C	-	-59.5
Surface Tension @20°C	mN/m	-	36
Viscosity @20°C	mPa.s	-	55
Heat of Vaporization @20°C	kJ/kg	-	976.5
Heat of Combustion (Net) @25°C	kJ/kg	-	23982
Specific Heat @20°C	kJ/kg/°C	-	2.48
Thermal Conductivity @20°C	W/m/°C	-	0.187
Molecular Weight	g/mol	-	76.09

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.

Applications

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

Storage and Handling

Advice on the Storage and Handling of MPG-USP can be found in the CEFIC "Guidelines for the Handling and Distribution fo Propylene Glycol USP/EP" which

is available at www.cefic.org.

**Hazard
Information**

For detailed Hazard Information please refer to the Material Safety Data Sheet on www.shell.com/chemicals.

Warranty

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