



## Data Sheet

### UC 6.2.2

Re-issued November 2002

Product name

# MPG – USP

Product category

## PO & PO-Derivatives Monopropylene glycol

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 aromatics hydrocarbon solvents and only slightly miscible with aliphatics hydrocarbon solvents.

Other chemical names for MPG are: 1,2-dihydroxy propane; 1,2-propanediol  
HO-CH<sub>2</sub>-CH<sub>2</sub>(OH)-CH<sub>3</sub>

Application

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

Typical properties

Property	Test Method	Unit	Value
Purity by GC	ASTM E-202	% (m/m)	99.5 min
Dipropylene glycol		% (m/m)	0.1 max
Colour	ASTM D1209	Pt-Co	5 max
Water	ASTM E-202; E-203	% (m/m)	0.2 max
Acidity as Acetic Acid	ASTM E-202; D1613	% (m/m)	0.005 max
Chlorides	USP	ppm	1.0 max
Sulphate	USP	% (m/m)	0.006 max
Iron	ASTM E-202	ppm	1.0 max
Heavy metals as Pb	USP	ppm	5.0 max

Typical properties  
of the pure  
product

Property	Test Method	Unit	Value
Molecular weight			76.094
Density		Kg/m <sup>3</sup>	1036
Coefficient of cubic expansion		10 <sup>-4</sup> /°C	6.95
Refractive index			1.4326
Pour point		°C	-59.5
Boiling point		°C	187.4
Flash point		°C	103
Vapour pressure at 20 °C		kPa	0.0067
Vapour pressure at 50 °C		kPa	0.0893
Dynamic viscosity		mPa.s	55
Surface tension at 25°C		mN/m	38
Specific heat		kJ/kg K	2.48
Latent heat of evaporation		kJ/kg	976.5
Thermal conductivity		W/m K	0.187
Heat of combustion at 25°C		kJ/kg	23982
Electrical conductivity		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.

<b>Test Methods</b>	ASTM standards are published by the American Society for Testing and Materials at <a href="http://www.astm.org">www.astm.org</a> . USP standards are published by the U.S. Pharmacopoeia Inc. at <a href="http://www.usp.org">www.usp.org</a> .			
<b>Storage and Handling</b>	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 <a href="http://www.cefic.org">www.cefic.org</a> .			
<b>Hazard Identification</b>	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.			
	<b>Property</b>	<b>Test Method</b>	<b>Unit</b>	<b>Value</b>
	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
	Autoignition temperature		°C	421

<b>Product code</b>	U1512
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	<p style="text-align: right;"><i>DS_MPG_USP_2002-11b.doc (16/07/2003)</i></p>