Shell Chemicals

DATASHEET

DPG

PO & DERIVATIVES

U1521
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DPG is a mixture of dipropylene glycol (DPG) isomers. It is a clear, colourless and odourless, hygroscopic liquid, completely soluble in water.

DPG 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 DPG are: Oxydipropanol

(OH)C3H6-O-C3H6(OH)

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNIT	VALUE
Purity	ASTM E-202	% (m/m)	99.5 min
Colour	ASTM E-202	Pt-Co	10 max
Water	ASTM E-202	% (m/m)	0.1 max
Acidity as Acetic Acid	ASTM E-202	% (m/m)	0.01 max
Iron	ASTM E-202	ppm	1.0 max
Molecular weight		g/mol	134.2
Density		Kg/m^3	1027
Coefficient of cubic expansion		$10^{-4}/°C$	7.4
Refractive index			1.4415
Pour point		°C	-47
Boiling point		°C	229-232
Flash point		°C	149
Vapour pressure at 20 °C		Pa	<1
Vapour pressure at 50 °C		Pa	16
Vapour density (air=1)			4.6
Dynamic viscosity		mPa.s	84
Surface tension at 25°C		mN/m	33.55
Specific heat		kJ/kg K	2.107
Latent heat of evaporation		kJ/kg	593.2
Thermal conductivity		W/m K	0.149
Heat of combustion at 25°C		MJ/kg	25.6
Electrical conductivity		µS/m	0.19
Dielectric constant			21

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.

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Application

Dipropylene Glycol finds its largest application in the plasticizer market, mainly as an dibenzoate. The second large market for DPG is in unsaturated polyester resins. Other applications are in urethane polyols, alkyd resins, functional fluids like de-icer formulations, inks and paints and as a solvent in fragrances and cosmetics as well as in food contact applications.

Test Methods

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

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

DPG is slightly hygroscopic and must be stored under conditions so that contamination with water and absorption of moisture are prevented. Contact with copper, copper alloys or zinc must be avoided.

The storage temperature of DPG is not critical, in that there will be no hazardous conditions created by the storage of the product at any ambient temperature likely to be encountered. DPG is a stable product and its processing performance is not expected to deteriorate significantly with time providing it is stored as described above.

The shelf life of DPG is 24 months. As a good industrial practice, however, it is recommended that DPG be used within 12 months from opening of the sealed package.

For further advice on Storage and Handling please refer to the Safety Data Sheet on www.shell.com/chemicals

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, please refer to the Safety Data Sheet.

PROPERTY	TEST METHOD	UNIT	VALUE
Flash point (PMCC)	ASTM D93	°C	149
Lower explosive limit in air		% (v/v)	1
Upper explosive limit in air		% (v/v)	3
Auto ignition temperature		°C	260