



## Dow Propylene Glycol, Industrial Grade

### General Description

Propylene Glycol, Industrial (PGI) Grade, is a high-purity material produced by the high temperature and pressure hydrolysis of propylene oxide (PO) with excess water. PGI is a distilled product with a purity specification of 99.5%. PGI is available from The Dow Chemical Company in drum and bulk quantities.

PGI is a colorless, water soluble, hygroscopic liquid with a characteristic glycol odor, medium viscosity, low vapor pressure and low toxicity. Dow's Propylene Glycol, Industrial Grade, is widely employed in numerous industries, having a wide range of practical applications.

### Properties<sup>1</sup> of Propylene Glycol, Industrial Grade

Chemical Name	1,2-Propanediol
Formula	CH <sub>3</sub> -CH(OH)-CH <sub>2</sub> OH; C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>
Molecular Weight (g/mol)	76.10
CAS Number	57-55-6
EINECS Number	200-338-0
Boiling Point, 101.3 kPa (1 atm)	187.4°C (369.3°F)
Distillation Range, 101.3 kPa (1 atm)	186-189°C (367-372°F)
Vapor Pressure, 20°C (68°F)	0.011 kPa (0.08 mm Hg)
25°C (77°F)	0.017 kPa (0.13 mm Hg)
Freezing Point	Supercools
Pour Point	< -57°C (-71°F)
Specific Gravity, 20/20°C (68/68°F)	1.038
25/4°C (77/39°F)	1.033
60/4°C (140/39°F)	1.007
Refractive Index n <sub>20/D</sub> , 20°C (68°F)	1.4310-1.4330
Viscosity, 25°C (77°F)	48.6 centipoise (mPa.s)
60°C (140°F)	8.42 centipoise (mPa.s)
Specific Heat, 25°C (77°F)	2.51 J/(g°K) (0.60 Btu/lb/°F)
Surface Tension, 25°C (77°F)	36 mN/m (36 dynes/cm)
Flash Point, Pensky-Martens Closed Cup	104°C (220°F)
Autoignition Temperature	371°C (700°F)
Thermal Conductivity, 25°C (77°F)	0.2061 W/(m°K) (0.1191 Btu hr <sup>-1</sup> ft <sup>-1</sup> °F <sup>-1</sup> )
Electrical Conductivity, 25°C (77°F)	10 micro S/m (0.1 * 10 <sup>-7</sup> mhos/cm)
Heat of Formation	-422 kJ/mol (-101 Kcal /g-mol)
Heat of Vaporization, 25°C (77°F)	67 kJ/mol (379 Btu/lb)

<sup>1</sup>These data are laboratory results typical of the product and should not be confused with, or regarded as specifications. For a copy of the sales specification, please contact your Dow representative or visit our web site at [www.dowpg.com](http://www.dowpg.com).

## Applications

Propylene Glycol, Industrial Grade, is used in the production of a wide variety of products, including such diverse commodities as polyester resins, engine coolants, latex paints, heat transfer fluids and deicing compounds. It also meets requirements for application in liquid cleaners, lubricants, plasticizers and cement grinding additives. It is employed as a solvent, heat transfer medium, or as a chemical intermediate, taking advantage of its reactive hydroxyl groups.

Propylene Glycol, Industrial Grade, is the preferred glycol for manufacturing high performance unsaturated polyester resins, themselves used in a variety of applications such as reinforced plastic laminates for marine construction, gel coats, sheet molding compounds (SMC), and synthetic marble castings.

Aqueous solutions of Propylene Glycol, Industrial Grade, display excellent antifreeze properties, and are, therefore, valuable as low temperature heat transfer and aircraft deicing fluids.

PGI is an important co-solvent for architectural water-based paints, and is also used as an intermediate in the production of alkyd resins for paints and varnishes. Its solvency lends its use for liquid cleaners, including the stabilization of enzymatic liquid laundry detergents.

Propylene Glycol, Industrial Grade, is for industrial applications only. For applications in the pharmaceutical, personal care, cosmetic, food and animal feed industries, Dow's Propylene Glycol USP/EP (PG USP/EP) is recommended.

## Storage & Handling

PGI has a shelf life of one year when stored below 40°C (104°F) in closed containers away from sources of UV light.

For more details about product handling and safety information, please refer to the Dow Material Safety Data Sheet (MSDS/SDS).

Additional information is available from your Dow representative or on our web site or by calling:

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