

PRODUCT IDENTIFICATION



Product Name: Propylene Glycol 50% – USP Grade (C₃H₈O₂)

CAS Number: 57-55-6

Molecular Formula: C₃H₈O₂

Molecular Weight: 76.09 g/mol

Grade: USP Grade

Purity / Concentration: 50%

Synonyms: Propylene Glycol, 1,2-Propanediol

PRODUCT OVERVIEW

Propylene Glycol 50% USP Grade is a high-purity, aqueous solvent utilized for its moisture-retaining and stabilizing properties. With a high level of clarity and strictly controlled impurities like arsenic and heavy metals, this 50% concentration is ideal for sensitive industrial and pharmaceutical applications.

Grade Significance: USP Grade signifies that the product meets the stringent standards set by the United States Pharmacopeia, ensuring it is safe for use in human-contact applications like food and medicine.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc Density	%	50	49.5	50.5	GC or density
Color (APHA)	APHA	3	—	10	APHA
Specific Gravity (20°C)	g/mL	1.0447	1.0397	1.0497	Hydrometer @ 20°C
Arsenic As	ppm	0.5	0	1.5	ICP-MS
Heavy Metals (as Pb)	ppm	≤ 2.5 ppm	—	—	ICP
Iron (Fe)	ppm	≤ 0.3 ppm	—	—	ICP-OES
Lead Pb	ppm	0.2	0	0.5	ICP-MS
Sulfates	ppm	2	0	5	Ion chromatography

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	Odor	Slightly sweet odor
Form	Liquid	Boiling Point	~106 °C
Melting / Freezing Point	-34 °C (freeze / crystallization onset)	Flash Point	Not flammable (aqueous solution)
Specific Gravity	1.046	Solubility	Completely miscible with water
Molecular Formula	C ₃ H ₈ O ₂	Molecular Weight	76.09 g/mol
Vapor Pressure (20°C)	0.13 mmHg	Viscosity (25°C)	0.87 cP
Refractive Index (20°C)	1.431	Density (25°C)	1.036 g/mL

APPLICATIONS

1. **Pharmaceuticals** — Serves as a high-quality solvent for the formulation of oral, injectable, and topical medications.
2. **Food & Beverage** — Functions as a reliable moisture-retaining agent to improve texture and shelf stability in various food products.
3. **Laboratory Research** — Acts as a key component in the mobile phase for reversed-phase chromatography to effectively separate organic compounds.
4. **HVAC & Industrial** — Used in specialized antifreeze formulations to provide low-temperature protection while maintaining low toxicity.

STORAGE & HANDLING

Proper storage in a cool, dry, and well-ventilated area is essential to maintain the product's chemical integrity and prevent contamination. Although the solution is not classified as flammable, maintaining stable environmental conditions ensures the concentration remains consistent and prevents the introduction of impurities.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to avoid chemical interaction.
- Keep away from strong oxidizing agents and acids.
- Ensure proper ventilation when handling to minimize inhalation exposure.
- Use appropriate personal protective equipment (PPE) such as gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Warning

No GHS pictograms assigned.

Hazard Statements:

- Not Classified
- Reported as not meeting GHS hazard criteria by 6762 of 6899 companies (only 2% companies provided GHS information). For more detailed information, please visit ECHA C&L website.

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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