

PRODUCT IDENTIFICATION



Product Name: Propylene Glycol 40% – USP Grade (C3H8O2)

CAS Number: 57-55-6

Molecular Formula: C₃H₈O₂

Molecular Weight: 76.09 g/mol

Grade: USP Grade

Purity / Concentration: 40%

Synonyms: Propylene Glycol Solution, 1,2-Propanediol 40%

PRODUCT OVERVIEW

Propylene Glycol 40% USP Grade is a high-purity, aqueous solution designed for consistent performance in sensitive formulations. Featuring an assay of 40.1% and minimal impurity levels, such as chloride and sulfate concentrations at 1 ppm, this product serves as a reliable solvent and moisture-retaining agent across various technical and life science applications.

Grade Significance: The USP Grade designation confirms that this product meets the rigorous standards set by the United States Pharmacopeia, ensuring it is safe and pure enough for pharmaceutical and food-grade applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	40.1	37	43	USP <561>
Color (APHA)	APHA	5	—	10	ASTM D1209
Specific Gravity (20°C)	g/mL	1.008	1.005	1.011	USP <841>
Residue After Ignition	%	0.0010	—	0.0070	USP <281>
Water Content	%	0.1	—	0.2	USP <921>
Heavy Metals (as Pb)	ppm	0.1	—	5	USP <231>
Chloride (Cl ⁻)	ppm	1	—	7	USP <221>
Sulfate (SO ₄ ²⁻)	ppm	1	—	20	USP <221>
Acidity	mL of 0.1 N NaOH	0.1	—	0.2	USP
Aldehydes	%	0.0001	—	0.0010	USP

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless, slightly viscous liquid	Odor	Slightly sweet odor
Form	Liquid	Boiling Point	188°C (pure component reference)
Melting / Freezing Point	-59°C (-74°F)	Flash Point	Not applicable (aqueous solution; not classified as flammable)
Specific Gravity	1.032	Solubility	Fully miscible with water and many organic solvents
Molecular Formula	C ₃ H ₈ O ₂	Molecular Weight	76.09 g/mol
Vapor Pressure (20°C)	0.1 mmHg	Viscosity (25°C)	40 cP
Refractive Index (20°C)	1.431	Density (25°C)	1.036 g/mL

APPLICATIONS

- 1. Pharmaceutical** — Functions as a stable solvent and carrier for active pharmaceutical ingredients to ensure proper drug delivery and formulation consistency.
- 2. Analytical Chemistry** — Used as a high-quality mobile phase component in reversed-phase chromatography to facilitate the precise separation of organic compounds.
- 3. Food & Beverage** — Acts as an effective humectant that retains moisture in food products to improve texture and extend overall shelf life.
- 4. Cosmetics & Personal Care** — Incorporated into skin care formulations for its excellent moisturizing properties and its ability to act as a solvent for other active ingredients.

STORAGE & HANDLING

Proper storage in a cool, dry, and well-ventilated area is essential to maintain the integrity of the 40% concentration and prevent contamination. While this aqueous solution is not classified as flammable, maintaining stable storage conditions ensures the product remains free of degradation and meets strict purity specifications.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with propylene glycol, such as HDPE or glass containers.
- Avoid contact with strong oxidizing agents.
- Ensure proper ventilation when handling to minimize inhalation exposure.
- Use appropriate personal protective equipment (PPE) such as gloves and safety 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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