TECHNICAL DATA SHEET

Glycerin USP Grade

Revised: 07/22/2026

PRODUCT IDENTIFICATION

Product Name: Glycerin USP Grade
CAS Number: 56-81-5
Molecular Formula: $C_3H_8O_3$
Molecular Weight: 92.09 g/mol
Grade: USP Grade
Purity / Concentration: 100%
Synonyms: Glycerol, 1,2,3-Propanetriol

PRODUCT OVERVIEW

Glycerin USP Grade is a high-purity, clear, and viscous liquid widely utilized for its exceptional humectant and solvent properties. With an assay of 99.8% and minimal impurity levels, such as chloride at 1 ppm and heavy metals at 1 ppm, this product meets rigorous standards for quality and consistency. It is an essential ingredient across pharmaceutical, cosmetic, and food industries.

Grade Significance: USP Grade indicates that the glycerin meets the strict quality and purity standards set by the United States Pharmacopeia, ensuring it is safe and consistent for use in pharmaceutical and food-grade applications. This designation provides end users with the confidence that the product is free from harmful contaminants.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc Density	%	99.5	99	100.0	GC or density
Color (APHA)	APHA	6	—	10	APHA
Specific Gravity (20°C)	g/mL	1.262	1.261	1.263	Hydrometer @ 25°C
Viscosity	cP	567.0	556.0	—	Per specification
Residue On Ignition	%	≤ 1 %	—	—	Ignition
Water Karl Fischer	%	0.4	—	5	Karl Fischer
Arsenic (As)	ppm	0.45	—	1.5	Per specification
Heavy Metals (as Pb)	ppm	≤ 5 ppm	—	—	ICP
Lead Pb	ppm	≤ 1 ppm	—	—	ICP-MS
Chlorides	ppm	6	—	30	Ion chromatography
Sulfates	ppm	≤ 20 ppm	—	—	Ion chromatography
Acid Value	mg KOH/g	≤ 1 mg KOH/g	—	—	Titration
Acidity	%	0.1	—	1	Titration

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless, thick viscous liquid	**Odor**	Slightly sweet odor
Form	Liquid	**Boiling Point**	554 °F at 760 mmHg (decomposes) (NTP, 1992)
Melting / Freezing Point	64 °F (NTP, 1992)	**Flash Point**	320 °F (NTP, 1992)
Solubility	Fully miscible with water, alcohols, many solvents	**Molecular Formula**	$C_3H_8O_3$
Molecular Weight	92.09 g/mol	**Vapor Pressure (20°C)**	0.0012 mmHg
Viscosity (25°C)	1.412 cP	**Refractive Index (20°C)**	1.474
Density (25°C)	1.261 g/mL		

APPLICATIONS

1. **Pharmaceuticals** — Functions as a reliable solvent and humectant to stabilize and deliver active ingredients in various medicinal formulations.
2. **Personal Care** — Widely used in skincare products for its ability to draw moisture into the skin, providing effective hydration.
3. **Food and Beverage** — Acts as a safe sweetener and preservative, helping to maintain moisture content and extend the shelf life of food items.
4. **Industrial** — Utilized in antifreeze formulations due to its low freezing point and excellent thermal stability.

STORAGE & HANDLING

Glycerin is hygroscopic, meaning it readily absorbs moisture from the air, which can compromise its purity and concentration over time. Storing it in a tightly sealed container in a cool, dry place is essential to maintain the integrity of the product and prevent contamination. While it is not classified as a hazardous material, proper storage ensures the chemical remains within its high-purity specifications for sensitive applications.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with glycerin, such as HDPE or glass containers.
- Avoid contact with strong oxidizing agents.
- Ensure proper ventilation in storage areas.
- Use personal protective equipment (PPE) such as gloves and goggles when handling.

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 5522 of 5617 companies (only 1.7% 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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