

PRODUCT IDENTIFICATION



Product Name: Ethylene Glycol 50/50

CAS Number: 107-21-1

Molecular Formula: $C_2H_6O_2$

Molecular Weight: 62.07 g/mol

Grade: Technical

Purity / Concentration: 50%

Synonyms: Ethylene Glycol Solution, Ethylene Glycol Mixture

PRODUCT OVERVIEW

Our Technical Grade Ethylene Glycol 50/50 is a high-quality, pre-diluted aqueous solution formulated for consistent performance in thermal management. With a specific gravity of 1.072 and extremely low impurity levels, this clear liquid is engineered for reliable heat transfer and anti-freeze applications.

Grade Significance: Technical grade signifies that the product is manufactured to meet industrial performance standards, offering a cost-effective solution for applications where high-purity pharmaceutical or food-grade specifications are not required.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc	%	50.4647	49.465	50.465	GC
Color (APHA)	APHA	2	—	10	APHA
Specific Gravity (20°C)	g/mL	1.057	1.054	1.06	Hydrometer @ 25°C
Non-Volatile Residue	%	0.013	0	0.05	Residue on Ignition
Water Karl Fischer	%	0.02	0	0.05	Karl Fischer
Arsenic As	ppm	≤ 0.0264 ppm	—	—	ICP-MS
Iron (Fe)	ppm	0.0040	0	0.05	ICP-MS
Lead Pb	ppm	≤ 0.0264 ppm	—	—	ICP-MS
Chlorides As Cl	ppm	0.045	0	0.25	ICP
Sulfate (SO ₄ ²⁻)	ppm	≤ 0.5276 ppm	—	—	ICP
Acidity As Acetic	%	≤ 0.0005 %	—	—	Titration
Aldehydes As Acetaldehyde	ppm	13	0	15	Spectrophotometry
Ash	ppm	5	0	25	Residue on Ignition
Deg Content	%	0.012	0	0.25	GC

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, viscous, colorless liquid solution	Odor	Slightly sweet odor
Form	Liquid	Boiling Point	≈106 °C (222.8 °F)
Melting / Freezing Point	Freezing point ≈ -37 °C (-34.6 °F)	Flash Point	Non-flammable as a 50/50 aqueous blend (effective FP >132 °C; water must be driven off to ignite). Pure EG 232 °F was the pure-EG value.
Specific Gravity	1.07	Solubility	Water-soluble, miscible with organic solvents
Molecular Formula	C ₂ H ₆ O ₂	Molecular Weight	62.07 g/mol
Vapor Pressure (20°C)	0.06 mmHg	Viscosity (25°C)	20.1 cP
Refractive Index (20°C)	1.431	Density (25°C)	1.115 g/mL
Decomposition Temp.	No decomposition below 100°C; decomposes around 198-250°C under air (gradual) depending on impurities		

APPLICATIONS

1. **Automotive** — Used as a high-performance coolant in engines to effectively manage heat and prevent freezing in cold climates.
2. **HVAC and Industrial Manufacturing** — Serves as a critical heat transfer fluid in large-scale cooling systems and industrial process temperature control.
3. **Aerospace** — Applied as a de-icing agent on aircraft surfaces to ensure safety and operational integrity during winter weather.
4. **Hydraulics** — Utilized in specialized hydraulic systems where its lubricating properties and thermal stability are required for smooth operation.

STORAGE & HANDLING

Proper storage is essential to maintain the concentration and purity of the solution, preventing contamination that could compromise thermal performance. Because this product is harmful if swallowed, it must be stored in clearly labeled, tightly sealed containers in a cool, well-ventilated area away from incompatible substances.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with ethylene glycol, such as HDPE or stainless steel.
- Avoid contact with strong oxidizing agents.
- Ensure proper ventilation when handling to minimize inhalation risks.
- 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**



Hazard Statements:

- H302: Harmful if swallowed [Warning Acute toxicity, oral]

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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

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