

PRODUCT IDENTIFICATION



Product Name: Ethylene Glycol 60/40

CAS Number: 107-21-1

Molecular Formula: C₂H₆O₂

Molecular Weight: 62.07 g/mol

Grade: Technical

Purity / Concentration: 60%

Synonyms: Ethylene Glycol Solution, Ethylene Glycol Blend

PRODUCT OVERVIEW

Alliance Chemical's 60/40 Ethylene Glycol is a high-purity technical grade solution featuring a 61% assay and a low 5 APHA color rating. This colorless, viscous liquid is primarily utilized as a versatile heat transfer fluid and anti-freeze agent across various industrial applications.

Grade Significance: Technical grade indicates that this product is manufactured for industrial and commercial use, providing a balance of high purity and cost-effectiveness for non-pharmaceutical or non-food applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	61	60	62	Titration with standardized NaOH
Color (APHA)	APHA	5	—	10	APHA/Hazen visual comparison
Specific Gravity (20°C)	g/mL	1.0625	1.06	1.065	Hydrometer or pycnometer at 20°C
Residue After Ignition	%	0.05	—	0.15	Gravimetric residue after ignition
Aluminum (Al)	ppm	0.1	—	0.5	ICP-OES
Arsenic (As)	ppm	0.02	—	0.1	ICP-MS
Calcium (Ca)	ppm	5	—	20	ICP-OES
Chromium (Cr)	ppm	0.1	—	0.5	ICP-OES
Cobalt (Co)	ppm	0.1	—	0.5	ICP-OES
Copper (Cu)	ppm	0.05	—	0.2	ICP-OES
Heavy Metals (as Pb)	ppm	0.05	—	0.2	ICP-OES
Iron (Fe)	ppm	0.1	—	0.5	ICP-OES
Lead (Pb)	ppm	0.05	—	0.2	ICP-OES
Magnesium (Mg)	ppm	5	—	20	ICP-OES
Manganese (Mn)	ppm	0.05	—	0.2	ICP-OES
Nickel (Ni)	ppm	0.05	—	0.2	ICP-OES
Potassium (K)	ppm	2	—	5	ICP-OES
Sodium (Na)	ppm	2	—	5	ICP-OES
Zinc (Zn)	ppm	0.2	—	0.5	ICP-OES
Ammonium (NH ₄ ⁺)	ppm	1	—	5	Ion chromatography
Chloride (Cl ⁻)	ppm	4	—	10	Ion chromatography (IC) or IC-ICP-OES
Nitrate (NO ₃ ⁻)	ppm	2	—	5	Ion chromatography
Phosphate (PO ₄ ³⁻)	ppm	1	—	5	Ion chromatography
Sulfate (SO ₄ ²⁻)	ppm	20	—	50	Ion chromatography

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Colorless, viscous liquid	Odor	Slightly sweet odor
Form	Liquid	Boiling Point	197°C (386.6°F)
Melting / Freezing Point	-13°C (8.6°F)	Flash Point	111°C (232°F)
Specific Gravity	1.08	Solubility	Soluble in water and alcohols
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

APPLICATIONS

1. **Automotive** — This blend is essential for automotive cooling systems, where it effectively lowers the freezing point of engine coolant to prevent mechanical failure in cold climates.
2. **Industrial Manufacturing** — It serves as a reliable heat transfer medium in closed-loop systems, ensuring efficient thermal regulation during complex industrial processes.
3. **Aviation** — The product is applied to aircraft surfaces as a de-icing agent, preventing hazardous ice accumulation during winter flight operations.
4. **Chemical Synthesis** — It acts as a consistent solvent in various chemical manufacturing workflows, facilitating precise reactions and material processing.

STORAGE & HANDLING

Proper storage is critical to prevent contamination and maintain the product's precise freezing point specifications. Because this chemical is harmful if swallowed, it must be stored in a cool, well-ventilated area away from incompatible materials to minimize health risks and ensure workplace safety.

- 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 exposure.
- Use 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.

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