

PRODUCT IDENTIFICATION

**Product Name:** Ethylene Glycol 60/40**CAS Number:** 107-21-1**Molecular Formula:** $C_2H_6O_2$ **Molecular Weight:** 62.07 g/mol**Grade:** Technical**Purity / Concentration:** 60%**Synonyms:** Ethylene Glycol Solution, Ethylene Glycol Blend

PRODUCT OVERVIEW

Alliance Chemical offers high-quality Technical Grade Ethylene Glycol 60/40, a colorless and viscous liquid solution. With a precise assay of 61% and low impurity levels, including minimal chloride and sulfate content, this blend serves as a reliable heat transfer medium and antifreeze agent.

Grade Significance: Technical grade indicates that the product is manufactured for industrial and commercial applications where high reliability is required, though it is not intended for food, drug, or medicinal use.

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	387.7 °F at 760 mmHg (NTP, 1992)
Melting / Freezing Point	Freezing point ≈ -48 °C	Flash Point	Non-flammable as an aqueous blend. Prior 232 °F was the pure-EG value.
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 product is primarily used in engine cooling systems to effectively lower the freezing point of coolant and prevent overheating.
2. **Industrial Manufacturing** — It serves as a highly efficient heat transfer fluid in various closed-loop industrial heating and cooling processes.
3. **Aviation** — The solution is applied to aircraft surfaces during winter operations to prevent ice formation and ensure safe flight conditions.
4. **Chemical Processing** — Ethylene Glycol 60/40 is utilized as a versatile solvent in the synthesis of various chemical products and intermediates.

STORAGE & HANDLING

Proper storage in a cool, dry, and well-ventilated area is essential to maintain product integrity and prevent degradation. Because this chemical is harmful if swallowed, it must be kept in tightly sealed, clearly labeled containers to prevent accidental ingestion or environmental exposure.

- 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
- H373: May cause damage to organs through prolonged or repeated exposure

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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