

PRODUCT IDENTIFICATION



Product Name: Ethylene Glycol Semiconductor Grade

CAS Number: 107-21-1

Molecular Formula: C₂H₆O₂

Molecular Weight: 62.07 g/mol

Grade: Semiconductor

Purity / Concentration: 100%

Synonyms: Ethylene Glycol, EG

PRODUCT OVERVIEW

Alliance Chemical offers high-purity Ethylene Glycol in Semiconductor Grade, featuring a rigorous assay of 99.95% and ultra-low impurity levels. This clear, colorless liquid is engineered for critical applications requiring precise thermal control and minimal contamination.

Grade Significance: Semiconductor grade indicates an exceptionally high level of purity with trace metals and ions held to near-undetectable levels, ensuring no unintended chemical reactions or contamination occur in delicate manufacturing environments.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	99.95	99.9	—	GC
Color (APHA)	APHA	5	—	10	ASTM D1209
Specific Gravity (20°C)	g/mL	1.113	1.113	1.116	ASTM D4052
Residue After Ignition	%	0.0001	—	0.0005	Gravimetric
Water Content	%	0.01	—	0.02	Karl Fischer
Heavy Metals (as Pb)	ppm	0.05	—	0.1	ICP-MS
Iron (Fe)	ppm	0.05	—	0.1	ICP-MS
Chloride (Cl ⁻)	ppm	0.1	—	0.2	Ion Chromatography
Sulfate (SO ₄ ²⁻)	ppm	0.1	—	0.2	Ion Chromatography
Acidity Meq Per G	meq/g	0.0001	—	0.0002	Titration
Carbonyl Compounds As Hcho	ppm	0.2	—	1	Spectrophotometry

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless, transparent 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 (231.8°F)
Specific Gravity	1.113	Solubility	Highly miscible with water, polar 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)	1.114 g/mL

APPLICATIONS

- Semiconductor Manufacturing** — Functions as a high-performance coolant in fabrication equipment to maintain stable thermal conditions during sensitive processes.
- Industrial Thermal Management** — Used as a reliable heat transfer fluid in industrial systems that demand long-term thermal stability and consistent performance.
- Automotive** — Provides effective antifreeze and cooling properties to protect engines and cooling systems from extreme temperatures.
- Chemical Processing** — Serves as a versatile solvent for various chemical reactions where a high-purity, stable medium is required.

STORAGE & HANDLING

Proper storage is essential to maintain the integrity of this semiconductor-grade material and prevent potential degradation. Because this product is harmful if swallowed, it must be stored in a cool, well-ventilated area away from incompatible materials to minimize safety risks.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to avoid chemical reactions.
- Keep away from strong oxidizing agents and acids.
- 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.

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