

PRODUCT IDENTIFICATION



Product Name: Ethylene Glycol Semiconductor Grade

CAS Number: 107-21-1

Molecular Formula: C₂H₆O₂

Molecular Weight: 62.07 g/mol

Grade: Semiconductor Grade

Purity / Concentration: 100%

Synonyms: Ethylene Glycol, EG

PRODUCT OVERVIEW

Alliance Chemical offers high-purity Ethylene Glycol Semiconductor Grade, a clear and colorless liquid engineered for precise thermal control. With an assay of 99.93% and exceptionally low impurity levels, such as iron at 0.0070 ppm, this product is essential for sensitive semiconductor fabrication environments.

Grade Significance: Semiconductor Grade indicates that the chemical has undergone rigorous purification to achieve ultra-low trace metal and impurity levels, which is crucial for preventing defects in microchip production.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc	%	99.93	99.43	100.4	GC
Color (APHA)	APHA	2	0	5	APHA
Specific Gravity (20°C)	g/mL	1.1158	1.1108	1.1208	Hydrometer @ 25°C
Water Karl Fischer	%	0.04	0	0.05	Karl Fischer
Iron (Fe)	ppm	0.0070	0	0.1	ICP-MS
Chlorides As Cl	ppm	0.1	0	0.5	ICP
Acidity As Acetic	ppm	5	0	30	Titration
Aldehydes As Acetaldehyde	ppm	9	0	30	Spectrophotometry
Ash	ppm	10	0	40	Residue on Ignition
Deg Content	%	0.0234	0	0.05	GC
Uv Transmittance 220Nm	%T	85.3	70	—	UV Spectrophotometry
Uv Transmittance 275Nm	%T	95.2	90	—	UV Spectrophotometry
Uv Transmittance 350Nm	%T	100.0	98	—	UV 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	387.7 °F at 760 mmHg (NTP, 1992)
Melting / Freezing Point	9 °F (NTP, 1992)	Flash Point	232 °F (NTP, 1992)
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 critical coolant in fabrication processes to maintain strict temperature stability for delicate electronic components.
- Industrial Thermal Management** — Acts as a reliable heat transfer fluid in industrial systems that require consistent thermal stability and performance.
- Automotive** — Serves as a high-performance antifreeze agent to prevent freezing and overheating in specialized cooling systems.
- Chemical Synthesis** — Utilized as a high-purity solvent for various chemical reactions where low contaminant levels are required to ensure product integrity.

STORAGE & HANDLING

Proper storage is vital to prevent degradation and ensure the safety of personnel, as the material can cause organ damage through repeated exposure. Keep containers tightly sealed in a cool, well-ventilated area away from incompatible substances to maintain its high-purity profile and mitigate potential health 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
- 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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