TECHNICAL DATA SHEET

Acetic Acid Glacial ACS Grade

Revised: 08/09/2026

PRODUCT IDENTIFICATION

Product Name: Acetic Acid Glacial ACS Grade
CAS Number: 64-19-7
Molecular Formula: $C_2H_4O_2$
Molecular Weight: 60.05 g/mol
Grade: ACS Grade
Purity / Concentration: 100%
Synonyms: Ethanoic Acid, Vinegar Acid

PRODUCT OVERVIEW

Acetic Acid Glacial ACS Grade is a high-purity, colorless reagent essential for laboratory and industrial applications. With a certified assay of 99.7% and undetectable levels of heavy metals, it provides the reliability required for sensitive chemical analysis and synthesis.

Grade Significance: ACS Grade designation ensures that the chemical meets the rigorous purity standards set by the American Chemical Society, guaranteeing it is suitable for critical laboratory and analytical use.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	99.7	99.7	100.2	Titration
Color (APHA/Hazen)	APHA	3	—	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.051	1.048	1.053	Hydrometer @ 20°C
Non-Volatile Residue	%	ND	0	0.05	Residue on Ignition
Water Karl Fischer	%	0.07	—	0.2	Karl Fischer
Heavy Metals As Pb	ppm	ND	—	1	ICP-MS (as Pb)
Iron (Fe)	ppm	ND	—	1	ICP-MS
Chloride Cl	ppm	≤ 1 ppm	—	—	ICP
Sulfate So4	ppm	≤ 1 ppm	—	—	ICP
Acid Value	mg KOH/g	≤ 0.05 mg KOH/g	—	—	Titration
Acidity	%	0.05	—	0.5	Titration
Aldehydes	%	ND	—	0.05	Per specification
Distillation Range Width	°C	0.6	—	1	ASTM D1078
Free Acid	%	0.01	0	0.05	Titration
Stability Available Oxygen	%	16.4	2	—	Stability Test
Sulfite So3	ppm	≤ 1 ppm	—	—	ICP

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Colorless, clear liquid	**Odor**	Pungent, vinegar-like
Form	Liquid	**Boiling Point**	244 °F at 760 mmHg (NTP, 1992)
Melting / Freezing Point	61.9 °F (NTP, 1992)	**Flash Point**	104 °F (NTP, 1992)
Specific Gravity	1.049	**Solubility**	Miscible with water, alcohol, and ether
Molecular Formula	$C_2H_4O_2$	**Molecular Weight**	60.05 g/mol
Vapor Pressure (20°C)	11 mmHg	**Viscosity (25°C)**	0.89 cP
Refractive Index (20°C)	1.371	**Density (25°C)**	1.049 g/mL
Vapor Density (rel. air)	0.93	**Partition Coefficient (log P)**	-0.17
Decomposition Temp.	decomposes when heated strongly; no defined melting point		

APPLICATIONS

1. **Analytical Chemistry** — Used as a consistent mobile phase component in reversed-phase chromatography to ensure precise separation of organic compounds.
2. **Spectroscopy** — Serves as a baseline solvent in UV-Vis spectroscopy, favored for its low UV cutoff wavelength which minimizes interference during testing.
3. **Pharmaceutical Manufacturing** — Acts as a vital reagent in the synthesis of complex pharmaceutical compounds where high chemical purity is strictly required.
4. **Industrial Processing** — Utilized for effective pH adjustment and control across various manufacturing workflows that demand precise acidity levels.

STORAGE & HANDLING

Because Acetic Acid Glacial is a flammable liquid, it must be stored in a cool, well-ventilated area away from ignition sources to mitigate fire risks. Proper containment is essential to prevent severe skin burns and eye damage, as the substance is highly corrosive.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with acetic acid, such as HDPE or glass containers.
- Avoid contact with strong oxidizers and bases.
- Ensure proper ventilation in storage areas to minimize vapor accumulation.
- Wear appropriate personal protective equipment (PPE) including 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: Danger

Hazard Statements:

- H226: Flammable liquid and vapour
- H314: Causes severe skin burns and eye damage

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