TECHNICAL DATA SHEET

75% Vinegar ACS Grade

Revised: 06/30/2026

PRODUCT IDENTIFICATION

Product Name: 75% Vinegar ACS Grade
CAS Number: 64-19-7
Molecular Formula: $C_2H_4O_2$
Molecular Weight: 60.05 g/mol
Grade: ACS Grade
Purity / Concentration: 75%
Synonyms: Acetic Acid Solution, Vinegar Solution

PRODUCT OVERVIEW

Alliance Chemical offers 75% Vinegar (Acetic Acid Solution), an ACS grade reagent characterized by its high purity and low contaminant profile, including a minimal 0.05 ppm heavy metal content. This clear, water-like liquid serves as a versatile solution for pH adjustment, organic synthesis, and industrial preservation needs.

Grade Significance: ACS Grade signifies that this product meets the strict purity standards set by the American Chemical Society, ensuring consistent and reliable results for critical laboratory and industrial applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	75.3	74	77	Titration with NaOH
Color (APHA)	APHA	5	—	10	ASTM D1209
Residue After Ignition	%	0.0010	—	0.0050	ACS Method
Water Content	%	0.2	—	0.5	Karl Fischer Titration
Heavy Metals (as Pb)	ppm	0.05	—	1	ICP-MS
Iron (Fe)	ppm	0.02	—	0.5	ICP-MS
Chloride (Cl^-)	ppm	0.1	—	1	Ion Chromatography
Sulfate (SO_4^{2-})	ppm	0.2	—	5	Ion Chromatography
Acetic Anhydride	%	0.0010	—	0.1	GC-FID
Formic Acid	%	0.0020	—	0.1	GC-FID

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, acidic liquid with water-like transparency	**Odor**	Pungent, vinegar-like odor
Form	Liquid	**Boiling Point**	Not characterized for the solution
Melting / Freezing Point	Not characterized for the solution	**Flash Point**	39°C (102.2°F)
Solubility	Complete water miscibility	**Molecular Formula**	$C_2H_4O_2$
Molecular Weight	60.05 g/mol	**Vapor Pressure (20°C)**	15 mmHg
Viscosity (25°C)	1.2 cP	**Refractive Index (20°C)**	1.373
Density (25°C)	1.05 g/mL	**Partition Coefficient (log P)**	-0.24
Decomposition Temp.	Not applicable under normal use; decomposes at elevated temperatures (~350-400°C)		

APPLICATIONS

1. **Water Treatment** — This solution is used to precisely adjust pH levels in industrial water processes, ensuring optimal chemical balance.
2. **Food Production** — It acts as a reliable preservative, utilizing its acidity to extend shelf life and maintain product stability in various food applications.
3. **Chemical Synthesis** — The high-purity nature of this reagent makes it an essential component for the synthesis of complex organic compounds.
4. **Laboratory Research** — It serves as a critical solvent in various organic extraction and analytical chemistry processes where low impurity levels are required.

STORAGE & HANDLING

Proper storage is critical because this solution is a flammable liquid with a flash point of 39°C, necessitating containment in a cool, well-ventilated area away from ignition sources. Additionally, because the chemical is corrosive, secure storage prevents accidental skin burns and environmental exposure, maintaining the integrity of its high-purity specifications.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid contact with strong oxidizing agents and bases.
- Ensure proper ventilation in storage areas to minimize vapor accumulation.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles when handling.

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 vapor [Warning Flammable liquids]
- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]

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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