

PRODUCT IDENTIFICATION



Product Name: 50% Vinegar - Concentrated Industrial Strength

CAS Number: 64-19-7

Molecular Formula: $C_2H_4O_2$

Molecular Weight: 60.05 g/mol

Grade: Technical Grade

Purity / Concentration: 50%

Synonyms: Acetic Acid Solution, Industrial Vinegar

PRODUCT OVERVIEW

Alliance Chemical's 50% Vinegar is a high-purity, technical-grade acetic acid solution designed for consistent performance in industrial settings. With a precise 50% assay and exceptionally low impurity levels, such as iron content ≤ 1 ppm, this solution provides reliable acidity for demanding chemical and cleaning applications.

Grade Significance: Technical Grade indicates that this product is manufactured to meet specific industrial performance standards rather than food or pharmaceutical purity requirements, making it a cost-effective solution for non-consumable manufacturing and processing needs.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	50	49.5	50.5	Titration
Color (APHA/Hazen)	APHA	3	—	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.061	1.059	1.063	Hydrometer @ 20°C
Residue On Evaporation	ppm	1	0	50	Evaporation
Iron (Fe)	ppm	≤ 1 ppm	—	—	ICP-MS
Chloride Cl	ppm	≤ 0.5 ppm	—	—	ICP
Sulfate SO_4	ppm	≤ 0.5 ppm	—	—	ICP
Acid Value	mg KOH/g	0.01	—	0.05	Titration
Acidity	%	0.04	—	0.08	Titration
Aldehydes	%	≤ 0.03 %	—	—	Per specification
Free Acid	%	0.01	0	0.08	Titration
Sulfite SO_3	ppm	0.45	—	0.5	ICP

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	Odor	Pungent, vinegar-like odor
Form	Liquid	Boiling Point	not characterized for the solution
Melting / Freezing Point	not characterized for the solution	Flash Point	No sustained flash; closed cup >100 °C (INEOS 579% SDS) — non-combustible solution. (Prior 100 was the glacial pure-compound value.)
Solubility	Fully water soluble	Molecular Formula	C ₂ H ₄ O 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		

APPLICATIONS

- 1. Water Treatment** — This concentrated solution is frequently used to effectively lower pH levels in industrial water treatment processes to ensure regulatory compliance.
- 2. Food Processing** — It serves as a versatile food preservative and flavoring agent, helping to extend shelf life and enhance the flavor profiles of various commercial food products.
- 3. Chemical Manufacturing** — As a key reactant, this acetic acid solution is essential in the synthesis of diverse organic compounds required for chemical production.
- 4. Industrial Cleaning** — The product is highly effective at dissolving stubborn mineral deposits and stains, making it an ideal choice for heavy-duty industrial maintenance.

STORAGE & HANDLING

Proper storage is critical because this solution is classified as a hazardous material that causes severe skin burns and eye damage. Containers must be kept tightly sealed in a cool, well-ventilated area to prevent accidental exposure and maintain the chemical integrity of the solution.

- 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 oxidizers and bases.
- Ensure proper ventilation in storage areas to prevent vapor accumulation.
- Wear appropriate personal protective equipment (PPE) 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:

- 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.

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