

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

Purity / Concentration: 50%

Synonyms: Acetic Acid Solution, Industrial Vinegar

PRODUCT OVERVIEW

Alliance Chemical offers high-quality 50% Industrial Vinegar, a technical grade acetic acid solution designed for robust performance. This clear, colorless liquid is characterized by a precise 50.3% assay and low impurity profile, making it a reliable choice for diverse industrial applications.

Grade Significance: Technical grade indicates that this product is manufactured for industrial use where high consistency is required, but it does not meet the strict regulatory standards required for pharmaceutical or reagent-grade applications.

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	1.0245	1.0215	1.0275	Hydrometer @ 25°C
Residue On Evaporation	ppm	1	0	50	Evaporation
Water Karl Fischer	%	0.03	—	0.08	Karl Fischer
Iron (Fe)	ppm	≤ 1 ppm	—	—	ICP-MS
Chloride Cl	ppm	≤ 0.5 ppm	—	—	ICP
Sulfate So4	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
Distillation Range	—	0.3	—	0.5	Per specification
Free Acid	%	0.01	0	0.08	Titration
Sulfite So3	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 10% 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 effectively utilized to lower pH levels in water treatment systems to maintain chemical balance.
- 2. Food Processing** — It serves as a critical food preservative and flavoring agent, helping to extend shelf life and enhance product profiles.
- 3. Chemical Manufacturing** — The product acts as a versatile reactant in the synthesis of complex organic compounds for various industrial chemical processes.
- 4. Industrial Cleaning** — Due to its acidic properties, it is highly effective at dissolving stubborn mineral deposits and stains from industrial equipment.

STORAGE & HANDLING

Proper storage is critical because this product is classified as a flammable liquid and can cause severe skin burns. It must be kept in a cool, well-ventilated area away from heat sources to mitigate the risk of fire and vapor accumulation.

- 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:

- 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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