

PRODUCT IDENTIFICATION

**Product Name:** 10% Diluted Acetic Acid Food Grade**CAS Number:** 64-19-7**Molecular Formula:** $C_2H_4O_2$ **Molecular Weight:** 60.05 g/mol**Grade:** Food Grade**Purity / Concentration:** 10%**Synonyms:** Diluted Acetic Acid, Vinegar Acid

PRODUCT OVERVIEW

Alliance Chemical's 10% Diluted Acetic Acid is a high-purity, food-grade solution designed for consistent performance in culinary and industrial applications. With a strictly controlled concentration and low impurity profile—including chloride levels at 10 ppm and nitrate at 5 ppm—this product ensures safety and reliability in food processing and preservation. It is a clear, colorless liquid commonly used to enhance flavor profiles and manage pH levels in various food products.

Grade Significance: Choosing Food Grade acetic acid guarantees that the product meets stringent purity standards suitable for human consumption, ensuring it is free from harmful contaminants. This designation provides end users with the assurance that the material is safe for direct contact with food products.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	10	9	11	Titration with standardized NaOH
Color (APHA)	APHA	10	—	20	APHA/Hazen visual comparison
Specific Gravity (20°C)	g/mL	1.008	1.003	1.013	Hydrometer or pycnometer at 20°C
Specific Gravity (25°C)	g/mL	1.01	1.005	1.015	Hydrometer or pycnometer at 25°C
Residue After Ignition	%	0.01	—	0.05	Gravimetric residue after ignition
Water Content	%	89.85	—	91	Karl Fischer titration (diluent water — composition basis; product is a 10% aqueous dilution; typical = 100 – assay – trace impurities)
Aluminum (Al)	ppm	0.1	—	1	ICP-OES
Arsenic (As)	ppm	0.02	—	0.1	ICP-MS
Calcium (Ca)	ppm	200.0	—	1000.0	ICP-OES
Chromium (Cr)	ppm	0.02	—	0.2	ICP-OES
Cobalt (Co)	ppm	0.01	—	0.2	ICP-OES
Copper (Cu)	ppm	0.05	—	0.5	ICP-OES
Heavy Metals (as Pb)	ppm	0.05	—	0.5	ICP-MS
Iron (Fe)	ppm	0.1	—	0.5	ICP-OES
Lead (Pb)	ppm	0.02	—	0.2	ICP-OES
Magnesium (Mg)	ppm	50	—	300.0	ICP-OES
Manganese (Mn)	ppm	0.05	—	0.5	ICP-OES
Nickel (Ni)	ppm	0.05	—	0.5	ICP-OES
Potassium (K)	ppm	100.0	—	500.0	ICP-OES
Sodium (Na)	ppm	1000.0	—	5000.0	ICP-OES
Zinc (Zn)	ppm	0.05	—	0.5	ICP-OES
Ammonium (NH ₄ ⁺)	ppm	1	—	5	Ion Chromatography (IC) or colorimetric kit
Chloride (Cl ⁻)	ppm	10	—	50	Ion Chromatography (IC) or IC-ICP
Nitrate (NO ₃ ⁻)	ppm	5	—	20	Ion Chromatography (IC)
Phosphate (PO ₄ ³⁻)	ppm	5	—	50	Ion Chromatography (IC)
Sulfate (SO ₄ ²⁻)	ppm	20	—	100.0	Ion Chromatography (IC)
Substances Darkened by H ₂ SO ₄	—	Passes test	—	—	Colorimetric comparison after H ₂ SO ₄ oxidation
Substances Reducing KMnO ₄	—	Passes test	—	—	Potassium permanganate time test
Acidity (meq)	meq	0.2	—	0.5	Acid-base titration
Aldehydes	ppm	1	—	5	Gas Chromatography (GC) with derivatization or HPLC

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid with mild vinegar odor	Odor	Pungent, vinegar-like odor
Form	Liquid solution	Boiling Point	118°C (244.4°F)
Melting / Freezing Point	16°C (60.8°F)	Flash Point	39°C (102.2°F)
Specific Gravity	1.01-1.013 (10% aqueous solution, 20 °C)	Solubility	Complete water miscibility
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
Density (25°C)	1.01 g/mL	Decomposition Temp.	Decomposes upon strong heating; Stable at ambient conditions

APPLICATIONS

1. **Food Processing** — Functions as an effective preservative in pickling and canning, where it inhibits microbial growth to extend shelf life.
2. **Culinary Production** — Used as a key ingredient in dressings, sauces, and marinades to provide essential acidity and enhance overall flavor.
3. **Quality Control** — Applied to adjust and stabilize the pH levels of food products, ensuring that safety and quality standards are consistently met.
4. **Commercial Sanitation** — Serves as a natural and effective cleaning agent for sanitizing kitchen surfaces, food preparation areas, and processing equipment.

STORAGE & HANDLING

Proper storage is essential to maintain the integrity of the 10% concentration and to prevent hazardous reactions. Because this product carries a H314 hazard rating for severe skin burns and eye damage, it must be stored in a cool, well-ventilated area away from incompatible materials to minimize risk. Ensuring secure, upright storage in original containers prevents accidental spills and maintains chemical stability.

- Store in a cool, dry place away from direct sunlight.
- Use HDPE containers for storage to prevent chemical reactions.
- Avoid contact with strong oxidizing agents 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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

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