TECHNICAL DATA SHEET

50% Diluted Acetic Acid Food Grade

Revised: 07/22/2026

PRODUCT IDENTIFICATION

Product Name: 50% 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: 50%
Synonyms: Vinegar Essence, Acetic Acid Solution

PRODUCT OVERVIEW

Alliance Chemical's 50% Diluted Acetic Acid is a high-purity, food-grade solution formulated for consistent performance in culinary and industrial settings. Featuring a precise 50.1% assay and minimal impurity levels, such as 1 ppm for chlorides and sulfates, this clear liquid is a reliable choice for acidification and preservation applications.

Grade Significance: Food Grade certification ensures that this acetic acid meets stringent purity standards, guaranteeing it is free from harmful contaminants and safe for use in products intended for human consumption.

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
pH	—	1.9	1.8	2	pH Meter
Specific Gravity (20°C)	g/mL	1.0245	1.0215	1.0275	Hydrometer @ 25°C
Non-Volatile Residue	%	ND	0	0.03	Residue on Ignition
Residue On Evaporation	ppm	1	0	50	Evaporation
Water Karl Fischer	%	0.03	—	0.1	Karl Fischer
Arsenic Antimony As As	ppm	0.5	0	1	ICP-MS
Iron (Fe)	ppm	≤ 1 ppm	—	—	ICP-MS
Lead Pb	ppm	0.2	0	0.5	ICP-MS
Chloride Cl	ppm	≤ 0.5 ppm	—	—	ICP
Sulfate So4	ppm	≤ 0.5 ppm	—	—	ICP
Acid Value	mg KOH/g	0.01	0	0.03	Titration
Acidity	%	0.02	—	0.08	Titration
Aldehydes	%	≤ 0.03 %	—	—	Per specification
Distillation Range	—	0.3	—	0.5	Per specification
Mercury Hg	ppm	0.05	0	0.1	ICP-MS
Sulfite So3	ppm	≤ 0.5 ppm	—	—	ICP

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	**Odor**	Pungent, vinegar-like odor
Boiling Point	100-118°C	**Flash Point**	11°C (52°F)
Solubility	Fully miscible in water	**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)**	1.371
Density (25°C)	1.025 g/mL		

APPLICATIONS

1. **Food Processing** — Used as a preservative to inhibit microbial growth and extend the shelf life of various shelf-stable food products.
2. **Condiment Manufacturing** — Functions as a key flavor enhancer, providing the necessary acidity for dressings, sauces, and marinades.
3. **Commercial Kitchens** — Utilized as an effective cleaning agent for food preparation areas, offering excellent degreasing properties while remaining food-safe.
4. **Beverage Production** — Applied to adjust acidity levels in specific beverage formulations to ensure optimal taste profiles and product stability.

STORAGE & HANDLING

Proper storage is critical because this product is classified as a flammable liquid with a flash point of 11°C, necessitating a cool, well-ventilated area away from ignition sources. Additionally, its corrosive nature requires storage in compatible containers to prevent structural degradation and ensure personnel safety from skin and eye hazards.

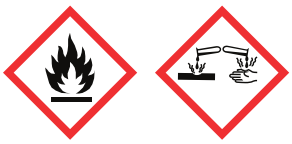
- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid contact with strong oxidizing agents and bases.
- Ensure proper ventilation when handling to minimize inhalation risks.
- Wear appropriate personal protective equipment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