

## 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 offers high-quality 10% Diluted Acetic Acid in a reliable Food Grade formulation. This clear, colorless solution is rigorously tested to ensure a 10% assay with strictly controlled impurity levels, making it an ideal choice for food preservation and pH regulation.

**Grade Significance:** Food Grade status ensures that the product meets stringent purity standards, guaranteeing that it is safe for human consumption and free from harmful contaminants.

**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 <sub>4</sub> <sup>+</sup> )              | ppm  | 1           | —     | 5      | Ion Chromatography (IC) or colorimetric kit                                                                                             |
| Chloride (Cl <sup>-</sup> )                           | ppm  | 10          | —     | 50     | Ion Chromatography (IC) or IC-ICP                                                                                                       |
| Nitrate (NO <sub>3</sub> <sup>-</sup> )               | ppm  | 5           | —     | 20     | Ion Chromatography (IC)                                                                                                                 |
| Phosphate (PO <sub>4</sub> <sup>3-</sup> )            | ppm  | 5           | —     | 50     | Ion Chromatography (IC)                                                                                                                 |
| Sulfate (SO <sub>4</sub> <sup>2-</sup> )              | ppm  | 20          | —     | 100.0  | Ion Chromatography (IC)                                                                                                                 |
| Substances Darkened by H <sub>2</sub> SO <sub>4</sub> | —    | Passes test | —     | —      | Colorimetric comparison after H <sub>2</sub> SO <sub>4</sub> oxidation                                                                  |
| Substances Reducing KMnO <sub>4</sub>                 | —    | 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

|                                 |                                                              |                              |                                              |
|---------------------------------|--------------------------------------------------------------|------------------------------|----------------------------------------------|
| <b>Appearance</b>               | Clear, colorless liquid with mild vinegar odor               | <b>Odor</b>                  | Pungent, vinegar-like odor                   |
| <b>Form</b>                     | Liquid solution                                              | <b>Boiling Point</b>         | 118°C (244.4°F)                              |
| <b>Melting / Freezing Point</b> | 16°C (60.8°F)                                                | <b>Flash Point</b>           | 39°C (102.2°F)                               |
| <b>Solubility</b>               | Complete water miscibility                                   | <b>Molecular Formula</b>     | C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> |
| <b>Molecular Weight</b>         | 60.05 g/mol                                                  | <b>Vapor Pressure (20°C)</b> | 15 mmHg                                      |
| <b>Viscosity (25°C)</b>         | 1.2 cP                                                       | <b>Density (25°C)</b>        | 1.01 g/mL                                    |
| <b>Decomposition Temp.</b>      | Decomposes upon strong heating; Stable at ambient conditions |                              |                                              |

## APPLICATIONS

- Food Processing** — Used as a preservative in pickling and vegetable storage to effectively inhibit microbial growth.
- Culinary Manufacturing** — Acts as a flavor enhancer for a wide range of salad dressings, gourmet sauces, and marinades.
- Food Safety** — Utilized to precisely adjust the pH levels of food products to ensure regulatory compliance and consistent quality.
- Commercial Sanitation** — Serves as a natural, effective cleaning agent for sanitizing food-grade kitchen surfaces and processing equipment.

## STORAGE & HANDLING

Because this product is classified as a flammable liquid and poses a risk of skin corrosion, it must be stored in a cool, well-ventilated area away from ignition sources. Proper containment prevents the release of hazardous vapors and protects staff from accidental exposure.

- 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:

- 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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