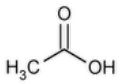
Status: Currently Official on 13-Feb-2025
Official Date: Official as of 01-May-2018
Document Type: USP Monographs
DocId: GUID-9A81023C-F39F-4B47-9C23-93F6F8A07B33_3_en-US
DOI: https://doi.org/10.31003/USPNF_M440_03_01
DOI Ref: 6a78q

Glacial Acetic Acid



$C_2H_4O_2$ 60.05

Acetic acid CAS RN®: 64-19-7.

DEFINITION

Glacial Acetic Acid contains NLT 99.5% and NMT 100.5%, by weight, of $C_2H_4O_2$.

IDENTIFICATION

• **Identification Tests—General ⟨191⟩, *Acetate*:** Meets the requirements

Sample solution (for test A): Glacial Acetic Acid and water (1:100)

ASSAY

• **Procedure**

Sample solution: Measure 2 mL of Glacial Acetic Acid into a glass-stoppered flask, previously tared while containing about 20 mL of water, and weigh again to obtain the weight of the substance under assay.

Analysis: Add 20 mL of water, then add phenolphthalein TS. Titrate with 1 N sodium hydroxide VS. Each mL of 1 N sodium hydroxide is equivalent to 60.05 mg of $C_2H_4O_2$.

Acceptance criteria: 99.5%–100.5%

IMPURITIES

Inorganic Impurities

• **Limit of Nonvolatile Residue:** Evaporate 20 mL in a tared dish, and dry at 105° for 1 h: the weight of the residue does not exceed 1.0 mg.

• **Chloride and Sulfate, *Chloride*⟨221⟩**

Sample solution: Dilute 1.0 mL with 20 mL of water.

Analysis: Add 5 drops of silver nitrate TS.

Acceptance criteria: No opalescence is produced.

• **Chloride and Sulfate, *Sulfate*⟨221⟩**

Sample solution: Dilute 1.0 mL with 10 mL of water.

Analysis: Add 1 mL of barium chloride TS.

Acceptance criteria: No turbidity is produced.

Organic Impurities

• **Procedure: Readily Oxidizable Substances**

Sample solution: Dilute 2.0 mL in a glass-stoppered vessel with 10 mL of water.

Analysis: Add 0.10 mL of 0.10 N potassium permanganate.

Acceptance criteria: The pink color is not changed to brown within 2 h.

SPECIFIC TESTS

• **Congealing Temperature ⟨651⟩:** NLT 15.6°

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Preserve in tight containers, and store at room temperature.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
GLACIAL ACETIC ACID	Documentary Standards Support	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. 50(6)

Current DocID: GUID-9A81023C-F39F-4B47-9C23-93F6F8A07B33_3_en-US
Previous DocID: GUID-9A81023C-F39F-4B47-9C23-93F6F8A07B33_1_en-US
DOI: https://doi.org/10.31003/USPNF_M440_03_01
DOI ref: 6a78q