

Sodium Acetate

$C_2H_3NaO_2$	Formula wt, anhydrous 82.03
$C_2H_3NaO_2 \cdot 3H_2O$	Formula wt, trihydrate 136.08
INS: 262(i)	CAS: anhydrous [127-09-3]
	CAS: trihydrate [6131-90-4]

DESCRIPTION

Sodium Acetate occurs as colorless, transparent crystals or as a granular, crystalline or white powder. The anhydrous form is hygroscopic; the trihydrate effloresces in warm, dry air. One gram of the anhydrous form dissolves in about 2 mL of water; 1 g of the trihydrate dissolves in about 0.8 mL of water and in about 19 mL of alcohol.

Function Buffer.

REQUIREMENTS

Identification A 1:20 aqueous solution gives positive tests for *Sodium* and for *Acetate*, Appendix IIIA.

Assay Not less than 99.0% and not more than 101.0% of $C_2H_3NaO_2$ after drying.

Alkalinity *Anhydrous*: Not more than 0.2%; *Trihydrate*: Not more than 0.05%.

Lead Not more than 2 mg/kg.

Loss on Drying *Anhydrous*: Not more than 1.0%; *Trihydrate*: Between 36.0% and 41.0%.

Potassium Compounds Passes test.

TESTS

Assay Accurately weigh about 400 mg of the dried sample obtained in the test for *Loss on Drying* (below), and dissolve it in 40 mL of glacial acetic acid, add 2 drops of crystal violet TS, and titrate with 0.1 N perchloric acid in glacial acetic acid.

Caution: Handle perchloric acid in an appropriate fume hood.

Perform a blank determination (see *General Provisions*), and make any necessary correction. Each milliliter of 0.1 N perchloric acid is equivalent to 8.203 mg of $C_2H_3NaO_2$.

Alkalinity Dissolve 2 g of sample in about 20 mL of water, and add 3 drops of phenolphthalein TS. If a pink color appears, not more than 0.4 mL or 0.1 mL of 0.1 N sulfuric acid is required to discharge it for the anhydrous and trihydrate, respectively.

Lead Determine as directed in the *Flame Atomic Absorption Spectrophotometric Method* under *Lead Limit Test*, Appendix IIIB, using a 10-g sample.

Loss on Drying Determine as directed under *Loss on Drying*, Appendix IIC, drying a sample at 80° overnight, followed by drying it at 120° to constant weight.

Potassium Compounds Mix a few drops of sodium bitartrate TS with 5 mL of a clear, saturated solution of sample. No turbidity develops within 5 min.

Packaging and Storage Store in tight containers.

Sodium Acid Pyrophosphate

Disodium Pyrophosphate; Disodium Dihydrogen Pyrophosphate; Disodium Dihydrogen Diphosphate; Acid Sodium Pyrophosphate	
$Na_2H_2P_2O_7$	Formula wt 221.94
INS: 450(i)	CAS: [7758-16-9]

DESCRIPTION

Sodium Acid Pyrophosphate occurs as a white, crystalline powder or granules. It is soluble in water. The pH of a 1:100 aqueous solution is about 4. It may contain a suitable aluminum and/or calcium salt to control the rate of reaction in leavening systems.

Function Buffer; emulsifier; leavening agent; sequestrant.

REQUIREMENTS

Identification

A. A 1:20 aqueous solution gives positive tests for *Sodium*, Appendix IIIA.

B. Dissolve 100 mg of sample in 100 mL of 1.7 N nitric acid. Add 0.5 mL of this solution to 30 mL of quimociac TS. A yellow precipitate does not form. Heat the remaining portion of the sample solution for 10 min at 95°, and add 0.5 mL of it to 30 mL of quimociac TS. A yellow precipitate forms immediately.

Assay Not less than 93.0% and not more than 100.5% of $Na_2H_2P_2O_7$.

Arsenic Not more than 3 mg/kg.

Fluoride Not more than 0.005%.

Insoluble Substances Not more than 1%.

Lead Not more than 2 mg/kg.

TESTS

Assay Dissolve about 500 mg of sample, accurately weighed, in 100 mL of water contained in a 400-mL beaker. Using a pH meter, adjust the pH of the solution to 3.8 with hydrochloric acid, then add 50 mL of a 1:8 solution of zinc sulfate (125 g of $ZnSO_4 \cdot 7H_2O$ dissolved in water, diluted to 1000 mL, filtered, and adjusted to pH 3.8 with hydrochloric acid), and allow the mixture to stand for 2 min. Titrate the liberated acid with 0.1 N sodium hydroxide until a pH of 3.8 is again reached. After each addition of 0.1 N sodium hydroxide near the endpoint, allow time for any precipitated zinc hydroxide to redissolve. (The 0.1 N sodium hydroxide used in this titration must be standardized against the primary standard, potassium biphthalate [$KHC_6H_4(COO)_2$], that has been dried at 105° for 2 h, as described for sodium hydroxide in *Volumetric Solutions under Solutions and Indicators*). Each milliliter of 0.1 N sodium hydroxide is equivalent to 11.10 mg of $Na_2H_2P_2O_7$.

Arsenic Determine as directed under *Arsenic Limit Test*, Appendix IIIB, using a solution of 1 g of sample in 10 mL of water.