

SODIUM ACETATE

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SYNONYMS INS No. 262(i)

DEFINITION

Chemical names Sodium acetate

C.A.S. number 127-09-3

Chemical formula $C_2H_3NaO_2 \cdot nH_2O$ (n = 0 or 3)

Structural formula $CH_3COONa \cdot nH_2O$ (n = 0 or 3)

Formula weight
Anhydrous: 82.03
Trihydrate: 136.08

Assay Not less than 98.5% after drying

DESCRIPTION Anhydrous: White, odourless, granular, hygroscopic powder
Trihydrate: Colourless, transparent crystals or a granular crystalline powder, odourless or with a faint, acetic odour. Effloresces in warm, dry air.

FUNCTIONAL USES Buffer

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Very soluble in water; soluble in ethanol

pH (Vol. 4) 8.0 - 9.5 (1 in 100 soln)

Test for sodium (Vol. 4) Passes test

Test for acetate (Vol. 4) Passes test

Heat test
Anhydrous: When heating the sample slowly, it first fuses gradually and boils, and later decomposes evolving an unpleasant odour of acetone. A solution of the residue gives alkaline reaction with litmus paper.
Trihydrate: When heating the sample slowly, it liquefies. Then water evaporates, and a powder forms. By heating more strongly, the powder fuses, and becomes lumpy and later decomposes evolving an odour of acetone. A solution of the residue gives alkaline reaction with litmus paper.

PURITY

Loss on drying (Vol. 4) Anhydrous: Not more than 2.0% (120°, 4 h)
Trihydrate: Between 36 and 42% (120°, 4 h)

Test for potassium
(Vol. 4)

Negative test

Acidity and alkalinity

Anhydrous: Dissolve 1.2 g of the sample in 20 ml of freshly boiled and cooled water. Add 2 drops of phenolphthalein TS, and keep the solution at 10°. If a colourless solution is produced, not more than 0.1 ml of 0.1 N sodium hydroxide should be required to give a pink colour. If a pink colour is produced, not more than 0.1 N hydrochloric acid should be required to discharge it.

Trihydrate: Weigh 2 g of the sample and proceed as directed under Anhydrous above.

Lead (Vol. 4)

Not more than 2 mg/kg
Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, "Instrumental Methods."

METHOD OF ASSAY

Weigh accurately about 200 mg of the sample obtained in the test for "Loss on drying". Dissolve 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. Perform a blank determination, and make any necessary correction. Each ml of 0.1 N perchloric acid is equivalent to 8.203 mg of $C_2H_3NaO_2$.