Sodium salicylate (Natrii salicylas)

Molecular formula. C₇H₅NaO₃

Relative molecular mass. 160.1

Graphic formula.

[Diagram of molecular structure]

Chemical name. Sodium 2-hydroxybenzoate; CAS Reg. No. 54-21-7.

Description. Small, colourless crystals or shiny flakes, or a white, crystalline powder; odourless or almost odourless.

Solubility. Freely soluble in water and ethanol (~750 g/l) TS; practically insoluble in ether R.

Category. Analgesic; antiphlogistic.

Storage. Sodium salicylate should be kept in a well-closed container, protected from light.

Additional information. Sodium salicylate is discoloured on exposure to light.

Requirements

Definition. Sodium salicylate contains not less than 99.0% and not more than 101.0% of C₇H₅NaO₃, calculated with reference to the dried substance.

Identity tests

A. When tested for sodium as described under 2.1 General identification tests, yields the characteristic reactions. If reaction B is to be used, prepare a 20 mg/mL solution.

B. A 0.05 g/mL solution yields the reaction described under 2.1 General identification tests as characteristic of salicylates.

Heavy metals. For the preparation of the test solution use 2.0 g dissolved in 45 mL of water, add 5 mL of hydrochloric acid (~70 g/l) TS, and filter. Dilute 25 mL of the filtrate to 40 mL with water and mix; determine the heavy metals content as described under 2.2.3 Limit test for heavy metals, according to Method A; not more than 20 μg/g.

Chlorides. Dissolve 1.25 g in a mixture of 5 mL of water and 5 mL of ethanol (~710 g/l) TS. Add 1 mL of nitric acid (~1000 g/l) TS, filter, and proceed with the filtrate as described under 2.2.1 Limit test for chlorides; the chloride content is not more than 0.2 mg/g.

Sulfates. Dissolve 0.85 g in 20 mL of water, add 1 mL of hydrochloric acid (~250 g/l) TS, and filter. Proceed with the filtrate as described under 2.2.2 Limit test for sulfates; the sulfate content is not more than 0.6 mg/g.

Sulfites and thiosulfates. Dissolve 1.0 g in 20 mL of water, add 1 mL of hydrochloric acid (~250 g/l) TS, and filter. Titrate the filtrate with iodine (0.05 mol/l) VS; not more than 0.15 mL of titrant is required to produce a yellow colour.

Clarity and colour of solution. A freshly prepared solution of 1.0 g in 10 mL of water is clear and not more intensely coloured than standard colour solution Rd1 when compared as described under 1.11 Colour of liquids.

Loss on drying. Dry to constant weight at 105°C; it loses not more than 5.0 mg/g.

Acidity. Dissolve 2.0 g in 50 mL of carbon-dioxide-free water R and add 10 drops of phenol red/ethanol TS; the solution is yellow. Titrate with sodium hydroxide (0.1 mol/l) VS; not more than 0.2 mL is required to produce a red colour.

Assay. Dissolve about 0.3 g, accurately weighed, in 30 mL of glacial acetic acid R1, and titrate with perchloric acid (0.1 mol/l) VS as described under 2.6 Non-aqueous titration, Method A. Each nil of perchloric acid (0.1 mol/l) VS is equivalent to 16.01 mg of C₇H₅NaO₃.