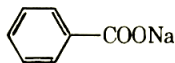


Sodium BenzoateC₇H₅NaO₂

Mol wt 144.10

DESCRIPTION

White, odorless or nearly odorless granules, crystalline powder, or flakes. One g dissolves in 2 ml of water, in 75 ml of alcohol, and in 50 ml of 90% alcohol.

REQUIREMENTS**Identification**

It gives positive tests for *Sodium*, page 517, and for *Benzoate*, page 516.

Assay Not less than 99.0% of C₇H₅NaO₂, calculated on the dried basis.

Alkalinity (as NaOH) Not more than 0.04%.

Arsenic (as As) Not more than 3 ppm.

Heavy Metals (as Pb) Not more than 10 ppm.

Water Not more than 1.5%.

TESTS

Assay Transfer about 600 mg, accurately weighed, to a 250-ml beaker, add 100 ml of glacial acetic acid, and stir until the sample is completely dissolved. Add crystal violet TS, and titrate with 0.1 N perchloric acid in glacial acetic acid. Each ml of 0.1 N perchloric acid is equivalent to 14.41 mg of C₇H₅NaO₂.

Alkalinity Dissolve 2 g in 20 ml of hot water, and add 2 drops of phenolphthalein TS. If a pink color is produced, not more than 0.2 ml of 0.1 N sulfuric acid is required to discharge it.

Arsenic A *Sample Solution* prepared as directed for organic compounds meets the requirements of the *Arsenic Test*, page 464.

Heavy Metals Dissolve 4 g in 40 ml of water, add dropwise, with vigorous stirring, 10 ml of diluted hydrochloric acid TS, and filter. A 25-ml portion of the filtrate meets the requirements of the *Heavy Metals Test*, page 512, using 20 µg of lead ion (Pb) in the control (*Solution A*).

Water Determine by the *Karl Fischer Titrimetric Method*, page 552.

Packaging and Storage Store in well-closed containers.

Functional Use in Foods Preservative; antimicrobial agent.

Perchloric Acid, 0.1 N (10.046 g HClO₄ per 1000 ml) Mix 8.5 ml of perchloric acid (70%) with 500 ml of glacial acetic acid and 30 ml of acetic anhydride. Cool, and add glacial acetic acid to make 1000 ml. Allow the prepared solution to stand for 1 day for the excess acetic anhydride to be combined, and determine the water content by the *Karl Fischer Titrimetric Method*, page 552. If the water content exceeds 0.05%, add more acetic anhydride, but if the solution contains no titratable water, add sufficient water to make the content between 0.02% and 0.05% of water. Allow to stand for 1 day, and again determine the water content by titration. Standardize the solution as follows: Weigh accurately about 700 mg of primary standard potassium biphthalate, KHC₆H₄(COO)₂, previously dried at 105° for 2 h, and dissolve it in 50 ml of glacial acetic acid in a 250-ml flask. Add 2 drops of crystal violet TS, and titrate with the perchloric acid solution until the violet color changes to emerald green. Deduct the volume of the perchloric acid consumed by 50 ml of the glacial acetic acid, and calculate the normality. Each 20.42 mg of KHC₆H₄(COO)₂ is equivalent to 1 ml of 0.1 N perchloric acid.

Crystal Violet TS Dissolve 100 mg of crystal violet in 10 ml of glacial acetic acid.

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Sodium

A solution of a sodium compound, previously converted to chloride or nitrate, yields, when mixed with five times its volume of cobalt-uranyl acetate TS, a golden yellow precipitate, which forms upon shaking. Sodium compounds impart an intense yellow color to a nonluminous flame.

Benzoate

Neutral solutions of benzoates yield a salmon-colored precipitate with ferric chloride TS. From moderately concentrated solutions of benzoate, diluted sulfuric acid TS precipitates free benzoic acid, which is readily soluble in ether.