

Sodium Nitrite

NaNO₂ Formula wt 69.00
INS: 250 CAS: [7632-00-0]

DESCRIPTION

Sodium Nitrite occurs as a white to slightly yellow, granular powder, or as white or nearly white, opaque, fused masses or sticks. It is hygroscopic in air. Its solutions are alkaline to litmus. One gram dissolves in 1.5 mL of water, but it is sparingly soluble in alcohol.

Function Color fixative in meat and meat products; antimicrobial agent; preservative.

REQUIREMENTS

Identification An aqueous solution gives positive tests for *Sodium* and for *Nitrite*, Appendix IIIA.

Assay Not less than 97.0% and not more than 100.5% of NaNO₂ after drying.

Lead Not more than 4 mg/kg.

Loss on Drying Not more than 0.25%.

TESTS

Assay Dissolve about 3 g of sample, previously dried over silica gel for 4 h and accurately weighed, in water to make 100 mL. Pipet 10 mL of this solution into a mixture of 100.0 mL of 0.1 *N* potassium permanganate, 50 mL of water, and 5 mL of sulfuric acid, keeping the tip of the pipet well below the surface of the liquid. Warm the solution to 40°, allow it to stand for 5 min, and add 25.0 mL of 0.1 *N* oxalic acid. Heat the mixture to about 80°, and titrate with 0.1 *N* potassium permanganate. Each milliliter of 0.1 *N* potassium permanganate is equivalent to 3.450 mg of NaNO₂.

Lead Determine as directed under *Lead Limit Test*, Appendix IIIB, using a solution of 1 g of sample in 10 mL of water, and 4 µg of lead (Pb) ion in the control.

Loss on Drying Determine as directed under *Loss on Drying*, Appendix IIC, drying a sample over silica gel for 4 h.

Packaging and Storage Store in tight containers.

Sodium Phosphate, Dibasic

Disodium Monohydrogen Phosphate; Disodium Phosphate
Na₂HPO₄ Formula wt, anhydrous 141.96
Na₂HPO₄·2H₂O Formula wt, dihydrate 177.99
INS: 339(ii) CAS: anhydrous [7558-79-4]
CAS: dihydrate [10028-24-7]

DESCRIPTION

Sodium Phosphate, Dibasic, occurs as a white, crystalline powder or as granules. It may be anhydrous or contain two

molecules of water of hydration. The anhydrous form is hygroscopic. Both forms are freely soluble in water and insoluble in alcohol.

Function Emulsifier; texturizer; buffer; nutrient.

REQUIREMENTS

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

Assay Not less than 98.0% of Na₂HPO₄ after drying.

Arsenic Not more than 3 mg/kg.

Fluoride Not more than 0.005%.

Insoluble Substances Not more than 0.2%.

Lead Not more than 4 mg/kg.

Loss on Drying *Anhydrous*: Not more than 5.0%; *Dihydrate*: Between 18.0% and 22.0%.

TESTS

Assay Transfer about 6.5 g of sample, previously dried at 105° for 4 h and accurately weighed, into a 250-mL beaker, add 50.0 mL of 1 *N* hydrochloric acid and 50 mL of water, and stir until the sample is completely dissolved. Place the electrodes of a suitable pH meter in the solution, and titrate the excess acid with 1 *N* sodium hydroxide to the inflection point occurring at about pH 4. Record the buret reading, and calculate the volume (A) of 1 *N* hydrochloric acid consumed by the sample. Continue the titration with 1 *N* sodium hydroxide until the inflection point occurring at about pH 8.8 is reached, record the buret reading, and calculate the volume (B) of 1 *N* sodium hydroxide required in the titration between the two inflection points (pH 4 to pH 8.8). When A is equal to or less than B, each milliliter of the volume A of 1 *N* hydrochloric acid is equivalent to 142.0 mg of Na₂HPO₄. When A is greater than B, each milliliter of the volume 2B + A of 1 *N* sodium hydroxide is equivalent to 142.0 mg of Na₂HPO₄.

Arsenic Determine as directed under *Arsenic Limit Test*, Appendix IIIB, using a solution of 1 g of sample in 35 mL of water.

Fluoride Determine as directed in *Method IV* under the *Fluoride Limit Test*, Appendix IIIB, using a 2-g sample.

Insoluble Substances Dissolve 10 g of sample in 100 mL of hot water, and filter through a tared filtering crucible (not glass). Wash the insoluble residue with hot water, dry at 105° for 2 h, cool, and weigh.

Lead Determine as directed in the *APDC Extraction Method* under *Lead Limit Test*, Appendix IIIB, using a 5-g sample.

Loss on Drying Determine as directed under *Loss on Drying*, Appendix IIC, drying the sample at 120° for 4 h.

Packaging and Storage Store in tightly closed containers.