Sodium Alginate

Content  Sodium Alginate, when dried, contains 90.8 - 106.0% of sodium alginate.

Description  Sodium Alginate occurs as a white to yellowish-white powder. It is almost odorless.

Identification  (1)  To 0.5 g of Sodium Alginate, add 50 ml of water in small portions while stirring, warm at 60 - 70°C for 20 minutes while stirring occasionally to make the solution uniformly, and cool. Use this solution as the test solution.

   (i)  To 5 ml of the test solution, add 1 ml of calcium chloride solution (3 g 40). A gelatinous precipitate is formed immediately.

   (ii)  To 10 ml of the test solution, add 1 ml of diluted sulfuric acid (1 g 20). A gelatinous precipitate is formed immediately.

   (iii)  To 1 ml of the test solution, add 1 ml of ammonium sulfate saturated solution.

   No precipitate is formed.

(2)  The residue on ignition of Sodium Alginate responds to all tests for Sodium Salt as described in the Qualitative Tests.

Purity

(1)  pH  6.0 - 8.0

Weigh 0.50 g of Sodium Alginate, add 50 ml of water gradually while stirring, warm at 60 - 70°C for 20 minutes while stirring occasionally to make the solution uniformly, cool and measure.

(2)  Sulfate  Not more than 0.96% as SO₄.

Weigh 0.10 g of Sodium Alginate, add 20 ml of water to make it pasty, add 1 ml of hydrochloric acid, shake vigorously, heat in a water bath for several minutes, and proceed as directed under Purity (3) for Alginic acid.

(3)  Phosphate  Weigh 0.10 g of Sodium Alginate, add 20 ml of water gradually while stirring, and warm at 60 - 70°C for 20 minutes while stirring occasionally to make the solution uniformly, and proceed as directed under Purity (4) for Alginic acid.

(4)  Heavy metals  Not more than 20 µg/g as Pb (1.0 g, Method 2, Control solution Lead Standard Solution 2.0 ml).

(5)  Arsenic  Not more than 4.0 µg/g as As₂O₃ (0.50 g, Method 3, Apparatus B).

Loss on Drying  Not more than 15.0% (105°C, 4 hours).

Residue on Ignition  33.0 - 37.0% (calculated on the dried basis).

Assay  Proceed as directed under the Assay for Alginic acid.
1 ml of 0.25 mol/l sodium hydroxide solution = 27.75 mg of sodium alginate