

D. MONOGRAPHS

Baking Powder

Single Baking Powder

Description Single Baking Powder occurs as white to gray-white powder or brittle lumps of clustered powder.

Purity (1) Nitric acid-insoluble substances Not more than 2.0%.

Weigh 5.0 g of Single Baking Powder, add 30 ml of water, shake for 3 minutes, filter the insoluble substances, and wash thoroughly with water. Open a hole at the bottom of the filter paper, transfer the insoluble substances with 40 ml of diluted nitric acid (1 : 10) into a beaker, boil for 1 minute, cool, filter through a Gooch crucible which previously has been ignited at about 550 °C to constant weight and weighed accurately after cooling, then wash with water until the washings show no acidity. Dry the insoluble substances with the Gooch crucible, and ignite at about 550 °C to constant weight. Weight the residue.

(2) pH 5.0 - 8.5.

Test Solution Weigh 1.0 g of Single Baking Powder, add 50 ml of water, heat in a water bath until effervescence ceases, and cool.

(3) Heavy metals Measure a small amount of Single Baking Powder, and heat. If carbonization occurs, proceed as directed under (i) below; if carbonization does not occur, proceed as directed under (ii) below.

(i) Not more than 40 µg/g as Pb (0.50 g, Method 2, Control solution Lead Standard Solution 2.0 ml).

(ii) Not more than 40 µg/g as Pb.

Test solution Weigh 2.0 g of Single Baking Powder, add 5 ml of nitric acid, and heat on a water bath for 15 minutes. Cool, add 5 ml of water, and filter. Wash the residue on the filter paper with 5 ml of water, combine the filtrate and the washings, add 2 drops of phenolphthalein TS, and add sodium hydroxide solution (1 : 10) until the color of the solution changes to a slightly pink color. Add 5 ml of diluted hydrochloric acid (1 : 4). Adjust the pH to 2.5 - 3.5 with ammonia TS, add 8 ml of diluted acetic acid (1 : 20) and water to make 100 ml, measure 25 ml of this solution, add water to make 50 ml.

Control Solution To 2 ml of Lead Standard Solution, exactly measured, add 2 ml of diluted acetic acid (1 : 20) and water to make 50 ml.

(4) Arsenic Take a small amount of Single Baking Powder and heat it. When the sample is carbonated, proceed as directed in (i) and when the sample is not carbonated, proceed as directed in (ii).

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- (i) Not more than 4.0 $\mu\text{g/g}$ as As_2O_3 (0.50 g, Method 3, Apparatus B)
- (ii) Not more than 4.0 $\mu\text{g/g}$ as As_2O_3

Test Solution Weigh 5.0 g of Single Baking Powder, transfer into a 100-ml flask, add 10 ml of water, heat until effervescence ceases, and neutralize with diluted hydrochloric acid (1 4) or sodium hydroxide solution (1 25). Add 5 ml of hydrochloric acid, and heat in a water bath for 30 minutes. Cool, and add water to make 25 ml. Measure 5 ml of this solution, add 10 ml of sulfurous acid, and evaporate to about 2 ml, and add water to make 10 ml. Perform the test, using 5 ml of this solution as the test solution.

Apparatus Apparatus B.

Procedure When neutralizing with aqueous ammonia or ammonia TS, adjust the pH of the solution to 2.5 - 3.5.

- (5) Gas evolution Measure the gas evolved. The volume is not less than 70 ml.

Duplex Baking Powder

Proceed as directed under Single Baking Powder for Duplex Baking Powder mixed in the proportion for use.

Ammonia Type Baking Powder

Proceed as directed under Single Baking Powder. pH specified in Purity (2) is 6.0 - 9.0. Use water as the replacement solution in determination of the volume of generated gas specified in Purity (5).