D. MONOGRAPHS

Ammonium Carbonate

Ammonium carbonate

Content Ammonium Carbonate contains not less than 30.0% of ammonia (NH_3 =17.03).

Description Ammonium Carbonate occurs as white or translucent crystals, crystalline powder, or lumps, having an odor of ammonia.

Identification Ammonium Carbonate responds to the test for Ammonium Salt and test (1) for Carbonate as described in the Qualitative Tests. Add magnesium sulfate to a solution of carbonate (1 → 20) and heat the solution, and a precipitation is produced.

Purity (1) Clarity of solution Almost clear (2.0 g, Water 20 ml).

(2) Chloride Not more than 0.0035% as Cl (2.0 g, Control solution 0.01 mol/l hydrochloric acid 0.20 ml).

(3) Heavy metals Not more than 10 μg/g as Pb.

Test Solution Weigh 2.0 g of Ammonium Carbonate, decompose on a water bath, add 1 ml of diluted acetic acid (1 → 20) to the residue, and evaporate to dryness on a water bath. Dissolve in 2 ml of diluted acetic acid (1 → 20), and add water to make 50 ml.

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

(4) *Arsenic* Not more than 4.0 μg/g as As_2O_3 (0.50 g, Method 1, Apparatus B).

Residue on Ignition Not more than 0.010% (10 g).

Assay Weigh accurately a flask with a ground-glass stopper containing about 30 ml of water, add about 2.5 g of Ammonium Carbonate, and weigh again accurately. Transfer into a 250-ml volumetric flask, and add water to make exactly 250 ml. Measure exactly 25 ml of this solution, and add gradually 50 ml of 0.1mol/l hydrochloric acid, exactly measured. Titrate the excess hydrochloric acid with 0.1mol/l sodium hydroxide (indicator: 4—5 drops of bromophenol blue TS).

1 ml of 0.1 mol/l hydrochloric acid = 1.7031 mg NH_3