

## D. MONOGRAPHS

### Calcium Glycerophosphate

$C_3H_7CaO_6P$

Mol. Wt. 210.14

[ 27214-00-2 ]

**Content** Calcium Glycerophosphate, when calculated on the dried basis, contains not less than 98.0% of calcium glycerophosphate ( $C_3H_7CaO_6P$ ).

**Description** Calcium Glycerophosphate occurs as a white powder. It is odorless and has a slightly bitter taste.

**Identification** To 1 g of Calcium Glycerophosphate, add 10 ml of water of 5 or below, and shake well. Use this solution as the test solution.

(1) Boil the test solution. White crystals are deposited.

(2) To 3 ml of the test solution, add 2 - 3 drops of lead acetate TS. A white, curd-like precipitate is formed. Add 3 ml of nitric acid. The precipitate dissolves.

(3) The test solution responds to all tests for Calcium Salt and for Glycerophosphate as described in the Qualitative Tests.

**Purity** (1) Clarity of solution Very slightly turbid (1.0 g, water 50 ml).

(2) Ethanol-soluble substance Not more than 1.0%.

Weigh 1.0 g of Calcium Glycerophosphate, add 25 ml of absolute ethanol, shake, and filter. Evaporate the filtrate on a water bath, dry the residue at 60 for 1 hour, and weight.

(3) Free alkali Weigh 1.0 g of Calcium Glycerophosphate, dissolve in 60 ml of water, add 5 drops of phenolphthalein TS, and titrate with 0.05 mol/l sulfuric acid. The consumed volume is not more than 1.5 ml.

(4) Chloride Not more than 0.071% as Cl (0.25 g, Control solution 0.01 mol/l hydrochloric acid 0.50 ml).

(5) Sulfate Not more than 0.048% as  $SO_4$  (0.50 g, Control solution 0.005 mol/l sulfuric acid 0.50 ml).

(6) Phosphate Not more than 0.040% as  $PO_4$ .

**Test Solution** Weigh 1.0 g of Calcium Glycerophosphate, dissolve in 10 ml of diluted nitric acid (1 10), add 10 ml of cold ammonium molybdate TS, and allow to stand for 10 minutes. The solution is not more turbid than the control solution.

**Control Solution** Weigh 0.192 g of monopotassium phosphate, dissolve in 100 ml of water, measure 3.0 ml of this solution, add diluted nitric acid (1 10) to make 100 ml. Measure 10 ml of this solution, add 10 ml of cold ammonium molybdate TS, and allow to stand for 10 minutes.

(7) Heavy metals Not more than 20  $\mu$ g/g as Pb.

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*Test Solution* Weigh 0.50 g of Calcium Glycerophosphate, dissolve in 3 ml of diluted acetic acid (1 : 20), and add water to make 50 ml.

*Control Solution* To 1.0 ml of Lead Standard Solution, add 2 ml of diluted acetic acid (1 : 20) and water to make 50 ml.

(8) Arsenic Not more than 4.0  $\mu\text{g/g}$  as  $\text{As}_2\text{O}_3$ .

*Test Solution* Weigh 1.0 g of Calcium Glycerophosphate, dissolve in 25 ml of water, add 1 ml of sulfuric acid and 10 ml of sulfurous acid, 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.

**Loss on Drying** Not more than 13.0% (0.5g, 150 °C, 4 hours).

**Assay** Weigh accurately about 1 g of Calcium Glycerophosphate, previously dried, dissolve in 10 ml of diluted hydrochloric acid (1 : 4), and add water to make exactly 50 ml. Proceed as directed in Method 1 under Calcium Salt Determination, using this solution as the test solution.

1 ml of 0.05 mol/l EDTA = 10.507 mg of  $\text{C}_3\text{H}_7\text{CaO}_6\text{P}$