Calcium Glycerophosphate

\[ \text{C}_3\text{H}_7\text{CaO}_6\text{P} \quad \text{Mol. Wt. 210.14} \]

\[ \text{27214-00-2} \]

**Content** Calcium Glycerophosphate, when calculated on the dried basis, contains not less than 98.0% of calcium glycerophosphate \((\text{C}_3\text{H}_7\text{CaO}_6\text{P})\).

**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\(^\circ\) 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\(^\circ\) 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 \(\text{SO}_4\) (0.50 g, Control solution 0.005 mol/l sulfuric acid 0.50 ml).

(6) **Phosphate** Not more than 0.040% as \(\text{PO}_4\).

**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 unità 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 unità 20) and water to make 50 ml.

(8) Arsenic  Not more than 4.0 µg/g as As$_2$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 $^\circ$C, 4 hours).

Assay  Weigh accurately about 1 g of Calcium Glycerophosphate, previously
dried, dissolve in 10 ml of diluted hydrochloric acid (1 unità 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 C$_3$H$_7$CaO$_6$P