

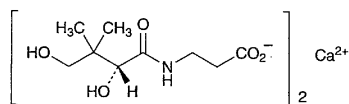
bath, cool, and add water to make exactly 100 mL. Pipet 20 mL of this solution, then 80 mL of water and 1.5 mL of 8 mol/L potassium hydroxide TS, and allow to stand for 3 to 5 minutes. Add 0.1 g of NN indicator, and titrate immediately with 0.02 mol/L disodium dihydrogen ethylenediamine tetraacetate VS until the color of the solution changes from red to blue.

Each mL of 0.02 mol/L disodium dihydrogen ethylenediamine tetraacetate VS  
= 4.364 mg of  $C_6H_{10}CaO_6$

**Containers and storage** Containers—Tight containers.

## Calcium Pantothenate

パントテン酸カルシウム



$C_{18}H_{32}CaN_2O_{10}$ : 476.53

Monocalcium bis{3-[(2*R*)-2,4-dihydroxy-3,3-dimethylbutanoylamino]propanoate} [137-08-6]

Calcium Pantothenate, when dried, contains not less than 5.7% and not more than 6.0% of nitrogen (N: 14.01), and not less than 8.2% and not more than 8.6% of calcium (Ca: 40.08).

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

It is freely soluble in water, very slightly soluble in ethanol (95), and practically insoluble in diethyl ether.

The pH of a solution of Calcium Pantothenate (1 in 20) is between 7.0 and 9.0.

It is hygroscopic.

**Identification (1)** Dissolve 0.05 g of Calcium Pantothenate in 5 mL of sodium hydroxide TS, and filter. To the filtrate add 1 drop of copper (II) sulfate TS: a deep blue color develops.

(2) To 0.05 g of Calcium Pantothenate add 5 mL of sodium hydroxide TS, and boil for 1 minute. After cooling, add diluted hydrochloric acid (1 in 10) to adjust the solution to a pH between 3 and 4, and add 2 drops of iron (III) chloride TS: a yellow color is produced.

(3) A solution of Calcium Pantothenate (1 in 10) responds to the Qualitative Tests for calcium salt.

**Optical rotation**  $[\alpha]_D^{20}$ : +25.0 – +28.5° (after drying, 1 g, water, 20 mL, 100 mm).

**Purity (1)** Clarity and color of solution—Dissolve 1.0 g of Calcium Pantothenate in 20 mL of water: the solution is clear and colorless.

(2) Heavy metals—Proceed with 1.0 g of Calcium Pantothenate according to Method 1, and perform the test. Prepare the control solution with 2.0 mL of Standard Lead Solution (not more than 20 ppm).

(3) Alkaloids—Dissolve 0.05 g of Calcium Pantothenate in 5 mL of water, add 0.5 mL of hexaammonium hep-

tamolybdate TS and 0.5 mL of a solution of phosphoric acid (1 in 10): no white turbidity is produced.

**Loss on drying** Not more than 5.0% (1 g, 105°C, 4 hours).

**Assay (1)** Nitrogen—Proceed with about 0.05 g of Calcium Pantothenate, previously dried and accurately weighed, as directed under Nitrogen Determination.

(2) Calcium—Weigh accurately about 0.4 g of Calcium Pantothenate, previously dried, and dissolve in 30 mL of water by warming. After cooling, add exactly 25 mL of 0.05 mol/L disodium dihydrogen ethylenediamine tetraacetate VS, then 10 mL of ammonia-ammonium chloride buffer solution, pH 10.7, and 0.04 g of eriochrome black T-sodium chloride indicator, and titrate the excess disodium dihydrogen ethylenediamine tetraacetate with 0.05 mol/L magnesium chloride VS until the color of the solution changes from blue-purple to red-purple. Perform a blank determination.

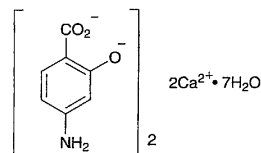
Each mL of 0.05 mol/L disodium dihydrogen ethylenediamine tetraacetate VS  
= 2.0039 mg of Ca

**Containers and storage** Containers—Tight containers.

## Calcium Para-aminosalicylate

### Pas-calcium

パラアミノサリチル酸カルシウム



$C_{14}H_{10}Ca_2N_2O_6 \cdot 7H_2O$ : 508.50

Dicalcium bis(4-amino-2-oxidobenzoate) heptahydrate [133-15-3, anhydride]

Calcium Para-aminosalicylate contains not less than 58.4% and not more than 62.0% of para-aminosalicylic acid ( $C_7H_7NO_3$ : 153.14), and not less than 15.3% and not more than 16.9% of calcium (Ca: 40.08).

**Description** Calcium Para-aminosalicylate occurs as a white to slightly colored powder. It is odorless, and has a slightly bitter taste.

It is very slightly soluble in water, and practically insoluble in ethanol (95), in acetone and in chloroform.

A saturated solution of Calcium Para-aminosalicylate is alkaline.

**Identification (1)** To 3 g of Calcium Para-aminosalicylate add 15 mL of ammonium chloride TS and 15 mL of water, heat on a water bath for 10 minutes: the most part of it dissolves and the gas evolved changes moistened red litmus paper to blue.

(2) To 0.05 g of Calcium Para-aminosalicylate add 100 mL of water, shake well, and filter. To 10 mL of the filtrate