



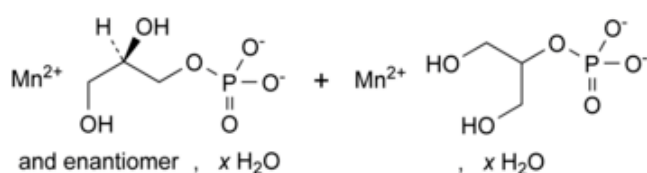
Edition: BP 2025 (Ph. Eur. 11.6 update)

Hydrated Manganese Glycerophosphate



[General Notices](#)

(Ph. Eur. monograph 2163)



C₃H₇MnO₆P,xH₂O 225.0 (anhydrous substance)

Ph Eur

DEFINITION

Mixture of variable proportions of hydrated manganese(II) (2*RS*)-2,3-dihydroxypropyl phosphate and hydrated manganese(II) 2-hydroxy-1-(hydroxymethyl)ethyl phosphate.

Content

97.0 per cent to 102.0 per cent (dried substance).

CHARACTERS

Appearance

White or pale pink, hygroscopic powder.

Solubility

Practically insoluble in water and in ethanol (96 per cent). It is freely soluble in dilute mineral acids.

IDENTIFICATION

- A. Mix 1 g with 1 g of [potassium hydrogen sulfate R](#) in a test tube fitted with a delivery tube. Heat strongly and direct the white vapour towards a piece of filter paper impregnated with a freshly prepared 10 g/L solution of [sodium nitroprusside R](#). The filter paper develops a blue colour in contact with [piperidine R](#).
- B. Disperse 50 mg in 5 mL of [water R](#). Add 0.5 mL of [ammonium sulfide solution R](#). A pale pink precipitate is formed that dissolves on the addition of 1 mL of [acetic acid R](#).
- C. Ignite 0.1 g in a crucible. Take up the residue with 5 mL of [nitric acid R](#) and heat on a water-bath for 1 min. Filter. The filtrate gives reaction (b) of phosphates ([2.3.1](#)).

TESTS

Solution S

Dissolve 5.0 g in 20 mL of [dilute hydrochloric acid R](#). Filter if necessary. Add [dilute ammonia R1](#) until a precipitate is formed. Dissolve the precipitate by adding the minimum quantity needed of [dilute hydrochloric acid R](#) and dilute to 100 mL with [distilled water R](#).

Glycerol and ethanol (96 per cent)-soluble substances

Maximum 1.0 per cent.

Shake 1.00 g with 25 mL of [ethanol \(96 per cent\) R](#) for 1 min. Filter. Evaporate the filtrate to dryness on a water-bath and dry the residue at 70 °C for 1 h. The residue weighs a maximum of 10 mg.

Chlorides ([2.4.4](#))

Maximum 0.15 per cent.

Dissolve 0.22 g in a mixture of 1 mL of [nitric acid R](#) and 10 mL of [water R](#) and dilute to 100 mL with [water R](#).

Phosphates ([2.4.11](#))

Maximum 0.3 per cent.

Dilute 1.0 mL of solution S to 100.0 mL with [water R](#). To 10 mL of this solution add 140 mL of [water R](#).

Sulfates ([2.4.13](#))

Maximum 0.2 per cent.

Dilute 5 mL of solution S to 50 mL with [distilled water R](#).

Iron ([2.4.9](#))

Maximum 50 ppm.

Dilute 4 mL of solution S to 10 mL with [water R](#).

[Loss on drying \(2.2.32\)](#)

Maximum 12.0 per cent, determined on 1.000 g by drying in an oven at 105 °C for 4 h.

ASSAY

To 0.200 g add 1.5 mL of [1 M hydrochloric acid](#), 50 mL of [water R](#), 10 mg of [ascorbic acid R](#) and 20 mL of [ammonium chloride buffer solution pH 10.0 R](#). Stir until dissolution. Immediately add 0.3 mL of a 2 g/L solution of [mordant black 11 R](#) in [triethanolamine R](#) and titrate with [0.1 M sodium edetate](#) until the colour changes from violet to pure blue.

1 mL of [0.1 M sodium edetate](#) is equivalent to 22.50 mg of $C_3H_7MnO_6P$.

STORAGE

In an airtight container.

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