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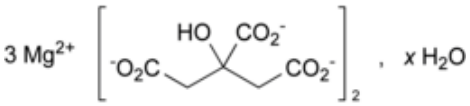
Edition: BP 2025 (Ph. Eur. 11.6 update)

Magnesium Citrate Dodecahydrate

General Notices

(Ph. Eur. monograph 2401)



$Mg_3(C_6H_5O_7)_2,xH_2O$ with $x \approx 12$ 451.1 (anhydrous substance)

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DEFINITION

Trimagnesium bis(2-hydroxypropane-1,2,3-tricarboxylate) dodecahydrate.

Content

15.0 per cent to 16.5 per cent of Mg (dried substance).

CHARACTERS

Appearance

White or almost white, fine powder.

Solubility

Sparingly soluble in water, practically insoluble in ethanol (96 per cent). It dissolves in dilute hydrochloric acid.

IDENTIFICATION

A. It gives the reaction of citrates (*2.3.1*).
B. It gives the reaction of magnesium (*2.3.1*).

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C. Loss on drying (see Tests).

TESTS

Solution S

Dissolve 2.5 g in 15 mL of *dilute hydrochloric acid R* with heating. Cool and dilute to 100 mL with *distilled water R*.

Appearance of solution

Solution S is clear (*2.2.1*) and not more intensely coloured than reference solution BY_6 (*2.2.2, Method II*).

pH (*2.2.3*)

6.0 to 8.5.

Disperse 5.0 g in *carbon dioxide-free water R* and dilute to 100 mL with the same solvent. Centrifuge and measure the pH of the clear supernatant.

Oxalates

Maximum 280 ppm.

Dissolve 0.50 g in a mixture of 3 mL of *hydrochloric acid R* and 4 mL of *water R* and add 1 g of *activated zinc R*. Allow to stand for 5 min. Transfer the liquid to a tube containing 0.25 mL of a 10 g/L solution of *phenylhydrazine hydrochloride R*. Heat to boiling. Cool rapidly, transfer to a graduated cylinder and add an equal volume of *hydrochloric acid R* and 0.25 mL of *potassium ferricyanide solution R*. Shake and allow to stand for 30 min. Any pink colour in the solution is not more intense than that of a standard prepared at the same time and in the same manner using 4 mL of a 50 mg/L solution of *oxalic acid R*.

Sulfates (*2.4.13*)

Maximum 0.2 per cent.

Dilute 3.0 mL of solution S to 15 mL with *distilled water R*.

Calcium (*2.4.3*)

Maximum 0.2 per cent.

To a mixture of 2 mL of solution S and 8 mL of *distilled water R*, add about 0.2 mL of *ammonia R* and dilute to 15 mL with *distilled water R*.

Iron (*2.4.9*)

Maximum 100 ppm.

Dilute 4.0 mL of solution S to 10 mL with *distilled water R*.

Loss on drying (*2.2.32*)

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29.0 per cent to 36.0 per cent, determined on 1.000 g by drying in an oven at 180 ± 10 °C for 5 h.

ASSAY

Dissolve 0.200 g in 5 mL of *dilute hydrochloric acid R* with heating. Cool and add 50 mL of *water R*. Adjust to pH 7.0 with *ammonia R*. Carry out the complexometric titration of magnesium (*2.5.11*).

1 mL of *0.1 M sodium edetate* is equivalent to 2.431 mg of Mg.

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