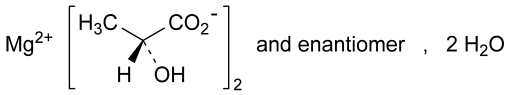
01/2008:2160

MAGNESIUM LACTATE DIHYDRATE

Magnesii lactas dihydricus



$C_6H_{10}MgO_6,2H_2O$ M_r 238.5

DEFINITION

Magnesium bis(2-hydroxypropanoate) or mixture of magnesium (2*R*)-, (2*S*)- and (2*RS*)-2-hydroxypropanoate dihydrate.

Content: 98.0 per cent to 102.0 per cent (dried substance).

CHARACTERS

Appearance: white or almost white, crystalline or granular powder.

Solubility: slightly soluble in water, soluble in boiling water, practically insoluble in ethanol (96 per cent).

IDENTIFICATION

A. It gives the reaction of lactates (*2.3.1*).

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

TESTS

Solution S. Dissolve 5.0 g with heating in *carbon dioxide-free water R* prepared from *distilled water R*, allow to cool and dilute to 100 ml with the same solvent.

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

pH (*2.2.3*): 6.5 to 8.5 for solution S.

Chlorides (*2.4.4*): maximum 200 ppm.

Dilute 5 ml of solution S to 15 ml with *water R*.

Sulphates (*2.4.13*): maximum 400 ppm.

Dilute 7.5 ml of solution S to 15 ml with *distilled water R*.

Iron (*2.4.9*): maximum 50 ppm.

Dilute 4 ml of solution S to 10 ml with *water R*.

Heavy metals (*2.4.8*): maximum 20 ppm.

12 ml of solution S complies with test A. Prepare the reference solution using *lead standard solution (1 ppm Pb) R*.

Loss on drying (*2.2.32*): 14.0 per cent to 17.0 per cent, determined on 0.500 g by drying in an oven at 125 °C.

ASSAY

Dissolve 0.180 g in *water R* and dilute to 300 ml with the same solvent. Carry out the complexometric titration of magnesium (*2.5.11*).

1 ml of *0.1 M sodium edetate* is equivalent to 20.25 mg of $C_6H_{10}MgO_6$.

01/2008:0041
corrected 6.0

MAGNESIUM OXIDE, HEAVY

Magnesii oxidum ponderosum

MgO M_r 40.30
[1309-48-4]

DEFINITION

Content: 98.0 per cent to 100.5 per cent of MgO (ignited substance).

CHARACTERS

Appearance: fine, white or almost white powder.

Solubility: practically insoluble in water. It dissolves in dilute acids with at most slight effervescence.

IDENTIFICATION

A. 15 g has an apparent volume (*2.9.15*) before settling of not more than 60 ml.

B. Dissolve about 15 mg in 2 ml of *dilute nitric acid R* and neutralise with *dilute sodium hydroxide solution R*. The solution gives the reaction of magnesium (*2.3.1*).

C. Loss on ignition (see Tests).

TESTS

Solution S. Dissolve 5.0 g in a mixture of 30 ml of *distilled water R* and 70 ml of *acetic acid R*, boil for 2 min, cool and dilute to 100 ml with *dilute acetic acid R*. Filter, if necessary, through a previously ignited and tared porcelain or silica filter crucible of suitable porosity to give a clear filtrate.

Appearance of solution. Solution S is not more intensely coloured than reference solution B_3 (*2.2.2, Method II*).

Soluble substances: maximum 2.0 per cent.

To 2.00 g add 100 ml of *water R* and boil for 5 min. Filter whilst hot through a sintered-glass filter (40) (*2.1.2*), allow to cool and dilute to 100 ml with *water R*. Evaporate 50 ml of the filtrate to dryness and dry at 100-105 °C. The residue weighs a maximum of 20 mg.

Substances insoluble in acetic acid: maximum 0.1 per cent.

Any residue obtained during the preparation of solution S, washed, dried, and ignited at 600 ± 50 °C, weighs a maximum of 5 mg.

Chlorides (*2.4.4*): maximum 0.1 per cent.

Dilute 1 ml of solution S to 15 ml with *water R*.

Sulphates (*2.4.13*): maximum 1.0 per cent.

Dilute 0.3 ml of solution S to 15 ml with *distilled water R*.

Arsenic (*2.4.2, Method A*): maximum 4 ppm, determined on 5 ml of solution S.

Calcium (*2.4.3*): maximum 1.5 per cent.

Dilute 1.3 ml of solution S to 150 ml with *distilled water R*. 15 ml of the solution complies with the test.

Iron (*2.4.9*): maximum 0.07 per cent.

Dissolve 0.15 g in 5 ml of *dilute hydrochloric acid R* and dilute to 10 ml with *water R*. Dilute 1 ml of the solution to 10 ml with *water R*.

Heavy metals (*2.4.8*): maximum 30 ppm.

To 20 ml of solution S add 15 ml of *hydrochloric acid R1* and shake with 25 ml of *methyl isobutyl ketone R* for 2 min. Allow to stand, then separate and evaporate the aqueous layer to dryness. Dissolve the residue in 1 ml of *acetic acid R* and dilute to 30 ml with *water R*. 12 ml of the solution complies with test A. Prepare the reference solution using *lead standard solution (1 ppm Pb) R*.

Loss on ignition: maximum 8.0 per cent, determined on 1.00 g at 900 ± 25 °C.

ASSAY

Dissolve 0.320 g in 20 ml of *dilute hydrochloric acid R* and dilute to 100.0 ml with *water R*. Using 20.0 ml of the solution, carry out the complexometric titration of magnesium (*2.5.11*).

1 ml of *0.1 M sodium edetate* is equivalent to 4.030 mg of MgO.

01/2008:0040
corrected 6.0

MAGNESIUM OXIDE, LIGHT

Magnesii oxidum leve

MgO M_r 40.30
[1309-48-4]

DEFINITION

Content: 98.0 per cent to 100.5 per cent of MgO (ignited substance).

CHARACTERS

Appearance: fine, white or almost white, amorphous powder.

Solubility: practically insoluble in water. It dissolves in dilute acids with at most slight effervescence.

IDENTIFICATION

A. 15 g has an apparent volume (*2.9.15*) before settling of at least 100 ml.

B. Dissolve about 15 mg in 2 ml of *dilute nitric acid R* and neutralise with *dilute sodium hydroxide solution R*. The solution gives the reaction of magnesium (*2.3.1*).

C. Loss on ignition (see Tests).

TESTS

Solution S. Dissolve 5.0 g in a mixture of 30 ml of *distilled water R* and 70 ml of *acetic acid R*, boil for 2 min, cool and dilute to 100 ml with *dilute acetic acid R*. Filter, if necessary, through a previously ignited and tared porcelain or silica filter crucible of a suitable porosity to give a clear filtrate.

Appearance of solution. Solution S is not more intensely coloured than reference solution B_2 (*2.2.2, Method II*).

Soluble substances: maximum 2.0 per cent.

To 2.00 g add 100 ml of *water R* and boil for 5 min. Filter whilst hot through a sintered-glass filter (40) (*2.1.2*), allow to cool and dilute to 100 ml with *water R*. Evaporate 50 ml of the filtrate to dryness and dry at 100-105 °C. The residue weighs a maximum of 20 mg.

Substances insoluble in acetic acid: maximum 0.1 per cent.

Any residue obtained during the preparation of solution S, washed, dried, and ignited at 600 ± 50 °C, weighs a maximum of 5 mg.

Chlorides (*2.4.4*): maximum 0.15 per cent.

Dilute 0.7 ml of solution S to 15 ml with *water R*.

Sulphates (*2.4.13*): maximum 1.0 per cent.

Dilute 0.3 ml of solution S to 15 ml with *distilled water R*.

Arsenic (*2.4.2, Method A*): maximum 4 ppm, determined on 5 ml of solution S.

Calcium (*2.4.3*): maximum 1.5 per cent.

Dilute 1.3 ml of solution S to 150 ml with *distilled water R*. 15 ml of the solution complies with the test.

Iron (*2.4.9*): maximum 0.1 per cent.

Dissolve 50 mg in 5 ml of *dilute hydrochloric acid R* and dilute to 10 ml with *water R*. Dilute 2 ml of t his solution to 10 ml with *water R*.

Heavy metals (*2.4.8*): maximum 30 ppm.

To 20 ml of solution S add 15 ml of *hydrochloric acid R1* and shake with 25 ml of *methyl isobutyl ketone R* for 2 min. Allow to stand, then separate and evaporate the aqueous layer to dryness. Dissolve the residue in 1.5 ml of *acetic acid R* and dilute to 30 ml with *water R*. 12 ml of the solution complies with test A. Prepare the reference solution using *lead standard solution (1 ppm Pb) R*.

Loss on ignition: maximum 8.0 per cent, determined on 1.00 g at 900 ± 25 °C.

ASSAY

Dissolve 0.320 g in 20 ml of *dilute hydrochloric acid R* and dilute to 100.0 ml with *water R*. Using 20.0 ml of the solution, carry out the complexometric titration of magnesium (*2.5.11*).

1 ml of *0.1 M sodium edetate* is equivalent to 4.030 mg of MgO.

01/2008:1540
corrected 6.0

MAGNESIUM PEROXIDE

Magnesii peroxidum

DEFINITION

Mixture of magnesium peroxide and magnesium oxide.

Content: 22.0 per cent to 28.0 per cent of MgO_2 (M_r 56.30).

CHARACTERS

Appearance: white or slightly yellow, amorphous, light powder.

Solubility: practically insoluble in water and in ethanol (96 per cent). It dissolves in dilute mineral acids.

IDENTIFICATION

A. Dissolve about 15 mg in 2 ml of *dilute nitric acid R* and neutralise with *dilute sodium hydroxide solution R*. The solution gives the reaction of magnesium (*2.3.1*).

B. Dissolve 0.1 g in 2 ml of *dilute sulphuric acid R* and dilute to 10 ml with *water R*. Shake 1 ml of this solution with 5 ml of *ether R* and 0.5 ml of *potassium dichromate solution R1*. The ether layer is blue.

TESTS

Solution S1. Dissolve cautiously 5.0 g in 40 ml of *hydrochloric acid R1*. Cautiously evaporate the solution to 10 ml and dilute to 100 ml with a mixture of equal volumes of *acetic acid R* and *distilled water R*. Filter, if necessary, through a previously ignited and tared porcelain or silica filter crucible of suitable porosity to give a clear filtrate. Keep the residue for the test for acid insoluble substances.

Solution S2. Dilute 5 ml of solution S1 to 25 ml with *distilled water R*.

Appearance of solution. Solution S1 is not more intensely coloured than reference solution B_4 (*2.2.2, Method II*).