



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

Magnesium Trisilicate Mixture

[General Notices](#)

Magnesium Trisilicate Oral Suspension; Compound Magnesium Trisilicate Mixture

DEFINITION

Magnesium Trisilicate Mixture is an *oral suspension* containing 5% w/v each of Magnesium Trisilicate, Light Magnesium Carbonate and Sodium Bicarbonate in a suitable vehicle with a peppermint flavour.

The mixture complies with the requirements stated under Oral Liquids and with the following requirements.

Content of magnesium, Mg

1.70 to 2.20% w/v.

Content of sodium bicarbonate, NaHCO₃

4.60 to 5.40% w/v.

IDENTIFICATION

- A. Filter 50 mL of the mixture using a Buchner funnel, reserving the filtrate, wash the filter with 50 mL of [water](#) and dry the residue at 100° to 105° for 1 hour. The filtrate yields reaction B characteristic of [sodium salts](#) and reaction A characteristic of *bicarbonates*, [Appendix VI](#).
- B. Shake 0.5 g of the residue obtained in test A with 5 mL of 1M [hydrochloric acid](#) for 5 minutes, add 5 mL of 1M [sodium hydroxide](#) and centrifuge. The supernatant liquid yields reaction B characteristic of [magnesium salts](#), [Appendix VI](#).
- C. The residue obtained in test A yields reaction A characteristic of *carbonates*, [Appendix VI](#).
- D. 30 mg of the residue obtained in test A yields the reaction characteristic of *silicates*, [Appendix VI](#).

Neutralising capacity

To 5 g add 100 mL of [water](#) and heat to 37°. Add 100 mL of [0.1M hydrochloric acid VS](#) previously heated to 37° and stir continuously using a suitable paddle stirrer rotating at a rate of about 200 revolutions per minute, maintaining the temperature at 37°. The pH of the suspension at 37° after 10 and 20 minutes is not less than 2.0 and not less than 2.4 respectively and at no time is it more than 4.0. Add 10 mL of [0.5M hydrochloric acid VS](#) previously heated to 37°, stir continuously for 1 hour, maintaining the temperature at 37°, and titrate with [0.1M sodium hydroxide VS](#) to pH 3.5. Subtract the volume of [0.1M sodium hydroxide VS](#) from 150 to obtain the number of mL of [0.1M hydrochloric acid VS](#) required for the neutralisation. Determine the [weight per mL](#) of the mixture, [Appendix V G](#), and hence the volume of [0.1M hydrochloric acid VS](#) required to neutralise 5 mL of the mixture. Not less than 100 mL of [0.1M hydrochloric acid VS](#) is required.

ASSAY

For [magnesium](#)

To 5 g add 7 mL of [hydrochloric acid](#) and 7 mL of [water](#), stir and heat on a water bath for 15 minutes. Add 30 mL of hot [water](#), mix, filter while still hot and wash the filter with hot [water](#). Cool the combined filtrate and washings and dilute to 100 mL with [water](#). To 25 mL of the resulting solution add 150 mL of [water](#) and 5 mL of [ammonia buffer pH 10.9](#) and titrate with 0.05M [disodium edetate VS](#) using [mordant black 11 solution](#) as indicator. Each mL of 0.05M [disodium edetate VS](#) is equivalent to 1.215 mg of Mg. Using the [weight per mL](#) of the mixture calculate the percentage of Mg, weight in volume.

For sodium bicarbonate

Boil 20 g with 100 mL of [water](#) for 5 minutes, filter, boil the residue with 100 mL of [water](#) for 5 minutes and filter. Combine the filtrates, cool and titrate with [0.5M hydrochloric acid VS](#) using [methyl orange-xylene cyanol FF solution](#) as indicator. Add 10 mL of [ammonia buffer pH 10.9](#) and titrate with 0.05M [disodium edetate VS](#) using [mordant black 11 solution](#) as indicator. After subtracting one-fifth of the volume of 0.05M [disodium edetate VS](#), each mL of [0.5M hydrochloric acid VS](#) is equivalent to 42.00 mg of NaHCO_3 . Using the [weight per mL](#) of the mixture calculate the percentage of NaHCO_3 , weight in volume.