



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

Sodium Carbonate



General Notices

Anhydrous Sodium Carbonate

(Ph. Eur. monograph 0773)

Na₂CO₃ 106.0 497-19-8

Ph Eur

DEFINITION

Content

99.5 per cent to 100.5 per cent (dried substance).

CHARACTERS

Appearance

White or almost white, slightly granular powder, hygroscopic.

Solubility

Freely soluble in water, practically insoluble in ethanol (96 per cent).

IDENTIFICATION

- A. Dissolve 1 g in [water R](#) and dilute to 10 mL with the same solvent. The solution is strongly alkaline ([2.2.4](#)).
- B. The solution prepared for identification test A gives the reaction of carbonates ([2.3.1](#)).
- C. The solution prepared for identification test A gives reaction (a) of sodium ([2.3.1](#)).
- D. Loss on drying (see Tests).

TESTS

Solution S

Dissolve 2.0 g in portions in a mixture of 5 mL of [hydrochloric acid R](#) and 25 mL of [distilled water R](#). Heat to boiling and cool. Add [dilute sodium hydroxide solution R](#) until the solution is neutral and dilute to 50 mL with [distilled water R](#).

Appearance of solution

The solution is clear ([2.2.1](#)) and not more intensely coloured than reference solution Y₆ ([2.2.2, Method I](#)).

Dissolve 2.0 g in 10 mL of [water R](#).

Alkali hydroxides and bicarbonates

Dissolve 0.4 g in 20 mL of [water R](#). Add 20 mL of [barium chloride solution R1](#) and filter. To 10 mL of the filtrate add 0.1 mL of [phenolphthalein solution R](#). The solution does not become red. Boil the remainder of the filtrate for 2 min. The solution remains clear ([2.2.1](#)).

Chlorides ([2.4.4](#))

Maximum 125 ppm.

Dissolve 0.4 g in [water R](#), add 4 mL of [dilute nitric acid R](#) and dilute to 15 mL with [water R](#).

Sulfates ([2.4.13](#))

Maximum 250 ppm, determined on solution S.

Iron ([2.4.9](#))

Maximum 50 ppm.

Dilute 5 mL of solution S to 10 mL with [water R](#).

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

Maximum 1.0 per cent, determined on 1.000 g by drying in an oven at 300 ± 15 °C.

ASSAY

Dissolve 0.400 g in 50 mL of [carbon dioxide-free water R](#). Titrate with [1 M hydrochloric acid](#), determining the end-point potentiometrically ([2.2.20](#)). Read the volume added at the 2nd point of inflection.

1 mL of [1 M hydrochloric acid](#) is equivalent to 52.99 mg of Na₂CO₃.

STORAGE

In an airtight container.

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