

Status: Currently Official on 16-Feb-2025
Official Date: Official as of 01-Jan-2018
Document Type: NF Monographs
DocId: GUID-D74E2BE5-2734-4A8E-9D66-F8A3EDA84658_3_en-US
DOI: https://doi.org/10.31003/USPNF_M76010_03_01
DOI Ref: fu73q

© 2025 USPC
Do not distribute

Sodium Carbonate

Na_2CO_3 (anhydrous) 105.99

$\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ 124.00

Carbonic acid, disodium salt;

Disodium carbonate CAS RN®: 497-19-8.

Monohydrate CAS RN®: 5968-11-6.

DEFINITION

Sodium Carbonate is anhydrous or contains one molecule of water of hydration. It contains NLT 99.5% and NMT 100.5% of Na_2CO_3 , calculated on the anhydrous basis.

IDENTIFICATION

- **A.** [IDENTIFICATION TESTS—GENERAL, Sodium\(191\)](#): Meets the requirements
- **B.** [IDENTIFICATION TESTS—GENERAL, Carbonate\(191\)](#): Meets the requirements

ASSAY

• PROCEDURE

Sample: 2 g of Sodium Carbonate, previously dried, from the test for *Water Determination*

Blank: 50 mL of water

Titrimetric system

(See [Titrimetry\(541\)](#).)

Mode: Direct titration

Titrant: 1 N sulfuric acid VS

Endpoint detection: Visual

Analysis: Transfer the *Sample* to a flask with the aid of 50 mL of water. Add methyl red TS, and titrate with 1 N sulfuric acid VS. Add the acid slowly, with constant stirring, until the solution becomes faintly pink. Heat the solution to boiling, cool, and continue the titration. Heat again to boiling, and titrate further as necessary until the faint pink color is no longer affected by continued boiling.

Calculate the percentage of sodium carbonate (Na_2CO_3) in the *Sample* taken.

$$\text{Result} = [(V - B) \times N \times F \times 100] / W$$

V = *Titrant* volume consumed by the *Sample* (mL)

B = *Titrant* volume consumed by the *Blank* (mL)

N = *Titrant* actual normality (mEq/mL)

F = equivalency factor, 52.99 mg/mEq

W = weight of the *Sample* (mg)

Acceptance criteria: 99.5%–100.5% on the anhydrous basis

SPECIFIC TESTS

- [WATER DETERMINATION, Method III\(921\)](#)

Sample: 2 g

Analysis: Dry the *Sample* at 105° for 4 h.

Acceptance criteria: The anhydrous form loses NMT 0.5% of its weight, and the hydrous form loses 12.0%–15.0% of its weight.

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in well-closed containers.
- **LABELING:** Label it to indicate whether it is anhydrous or hydrous.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
SODIUM CARBONATE	Documentary Standards Support	SE2020 Simple Excipients
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SE2020 Simple Excipients

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. Information currently unavailable

Current DocID: GUID-D74E2BE5-2734-4A8E-9D66-F8A3EDA84658_3_en-US
Previous DocID: GUID-D74E2BE5-2734-4A8E-9D66-F8A3EDA84658_1_en-US
DOI: https://doi.org/10.31003/USPNF_M76010_03_01
DOI ref: [fu73q](#)

OFFICIAL