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Sodium Thiosulfate

$\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ 248.18

$\text{Na}_2\text{S}_2\text{O}_3$ 158.11

Thiosulfuric acid, disodium salt, pentahydrate;

Disodium thiosulfate pentahydrate CAS RN®: 10102-17-7.

Anhydrous CAS RN®: 7772-98-7.

DEFINITION

Sodium Thiosulfate contains NLT 99.0% and NMT 100.5% of sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$), calculated on the anhydrous basis.

IDENTIFICATION

Change to read:

• **A.** [▲ SPECTROSCOPIC IDENTIFICATION TESTS \(197\), Infrared Spectroscopy: 197A](#)▲ (CN 1-MAY-2020)

• **B.** [IDENTIFICATION TESTS—GENERAL, Sodium\(191\).](#)

Sample solution: 0.1 g/mL in water

Acceptance criteria: Meets the requirements

ASSAY

• **PROCEDURE**

Sample: 800 mg

Titrimetric system

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

Mode: Direct titration

Titrant: 0.1 N iodine VS

Endpoint detection: Visual

Analysis: Dissolve the *Sample* in 30 mL of water. Adjust with a suitable solution of dilute hydrochloric acid or dilute sodium hydroxide to a pH of 6.2–6.7, if necessary. Titrate with *Titrant*, adding 3 mL of starch TS as the endpoint is approached. Each mL of *Titrant* is equivalent to 15.81 mg of sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$).

Acceptance criteria: 99.0%–100.5% on the anhydrous basis

IMPURITIES

• **CALCIUM**

Sample solution: Dissolve 1 g in 20 mL of water.

Analysis: To the *Sample solution* add a few mL of ammonium oxalate TS.

Acceptance criteria: No turbidity is produced.

SPECIFIC TESTS

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

Sample: 1.0 g

Analysis: Dry the *Sample* under vacuum at 40°–45° for 16 h.

Acceptance criteria: 32.0%–37.0%

ADDITIONAL REQUIREMENTS

• **PACKAGING AND STORAGE:** Preserve in tight containers.

• [USP REFERENCE STANDARDS \(11\).](#)

[USP Sodium Thiosulfate RS](#)

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

Topic/Question	Contact	Expert Committee
SODIUM THIOSULFATE	Documentary Standards Support	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: [Chromatographic Database](#)

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