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Sublimed Sulfur

S 32.07

Sulfur CAS RN®: 7704-34-9; UNII: 70FD1KFU70.

DEFINITION

Sublimed Sulfur, dried over phosphorus pentoxide for 4 h, contains NLT 99.5% and NMT 100.5% of sulfur (S).

IDENTIFICATION

• **A.** It burns in the air to sulfur dioxide, which can be recognized by its characteristic odor.

ASSAY

• **Procedure**

Sample: 60 mg of Sublimed Sulfur previously dried over phosphorous pentoxide for 4 h

Titrimetric system

Mode: Direct titration

Titrant: 0.1 N sodium hydroxide VS

Endpoint detection: Visual

Analysis: Proceed as directed in *Oxygen Flask Combustion ⟨471⟩*, using a 1000-mL flask and using a mixture of 10 mL of water and 5.0 mL of hydrogen peroxide TS as the absorbing liquid. When the combustion is complete, fill the lip of the flask with water; loosen the stopper; then rinse the stopper, sample holder, and sides of the flask with water; and remove the stopper assembly. Heat the contents of the flask to boiling, and boil for about 2 min. Cool to room temperature, add phenolphthalein TS, and titrate with *Titrant*. Perform a blank determination and make any necessary correction. Each mL of 0.1 N sodium hydroxide is equivalent to 1.603 mg of sulfur (S).

Acceptance criteria: 99.5%–100.5% dried over phosphorous pentoxide for 4 h

IMPURITIES

• **Residue on Ignition ⟨281⟩:** NMT 0.5%

Change to read:

• ▲**Arsenic ⟨211⟩, *Procedures, Procedure 1*▲** (CN 1-Jun-2023)

Test preparation: Digest 750 mg of Sublimed Sulfur with 20 mL of 6 N ammonium hydroxide for 3 h, filter, and evaporate the clear filtrate on a steam bath to dryness. Add 15 mL of 2 N sulfuric acid and 1 mL of 30% hydrogen peroxide solution, evaporate to strong fumes of sulfur trioxide, and cool. Add cautiously 10 mL of water, and again evaporate to strong fumes, repeating, if necessary, to remove any trace of hydrogen peroxide. Cool, and dilute cautiously with water to 35 mL.

Acceptance criteria: NMT 4 ppm

SPECIFIC TESTS

• **Solubility in Carbon Disulfide**

Sample: 1 g

Acceptance criteria: The *Sample* dissolves slowly and usually incompletely in about 2 mL of carbon disulfide.

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Preserve in well-closed containers.

Topic/Question	Contact	Expert Committee
SUBLIMED SULFUR	Documentary Standards Support	SM12020 Small Molecules 1
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM12020 Small Molecules 1

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
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