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Iodine

I_2 253.81

Iodine CAS RN®: 7553-56-2; UNII: 9679TC07X4.

DEFINITION

Iodine contains NLT 99.8% and NMT 100.5% of I.

IDENTIFICATION

- **A.** Solutions (1 in 1000) in chloroform and in carbon disulfide have a violet color.
- **B.**

Analysis: To a saturated solution add starch–potassium iodide TS.

Acceptance criteria: A blue color is produced. When the mixture is boiled, the color vanishes but reappears as the mixture cools, unless it has been subjected to prolonged boiling.

ASSAY

- **Procedure**

Sample: 500 mg of powdered Iodine

Analysis: Place the *Sample* in a tared, glass-stoppered flask, insert the stopper, and add 1 g of potassium iodide dissolved in 5 mL of water. Dilute with water to 50 mL, add 1 mL of 3 N hydrochloric acid, and titrate with 0.1 N sodium thiosulfate VS, adding 3 mL of starch TS as the endpoint is approached. Each mL of 0.1 N sodium thiosulfate is equivalent to 12.69 mg of Iodine (I).

Acceptance criteria: 99.8%–100.5%

IMPURITIES

- **Limit of Chloride or Bromide**

Sample solution: Triturate 250 mg of finely powdered Iodine with 10 mL of water, and filter the solution.

Analysis: To the *Sample solution* add, dropwise, sulfurous acid (free from chloride), previously diluted with several volumes of water, until the iodine color just disappears. Add 5 mL of 6 N ammonium hydroxide, followed by 5 mL of silver nitrate TS in small portions. Filter, and acidify the filtrate with nitric acid.

Acceptance criteria: The resulting liquid is not more turbid than a control made with the same quantities of the same reagents to which 0.10 mL of 0.020 N hydrochloric acid has been added, the sulfurous acid being omitted (0.028% as chloride).

- **Limit of Nonvolatile Residue**

Analysis: Place 5.0 g in a tared porcelain dish, heat on a steam bath until the iodine has been driven off, and dry at 105° for 1 h.

Acceptance criteria: NMT 0.05% of the residue remains.

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in tight containers.

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