

#### **28.1.3.1. Iopanoic Acid**

Iopanoic acid is a monocarboxylic acid and an iodine-containing radio-contrast medium used in cholecystography.

**Molecular Formula:**  $C_{11}H_{12}I_3NO_2$

**IUPAC Nomenclature:** 2-[(3-amino-2,4,6-triodophenyl)methyl]butanoic acid

**Physical Properties:** Iopanoic acid occurs as a white coloured powder with no taste and odour. It is insoluble in water; soluble in ether and chloroform; and soluble in solution of alkali hydroxides and carbonates.

**Chemical Properties**

- 1) Violet vapours of iodine are produced when iopanoic acid is strongly heated.
- 2) It contains an aromatic primary amino group due to which it forms a deep orange red coloured precipitate by undergoing diazotisation and coupling reaction.

**Uses:** Iopanoic acid is prescribed in conditions such as cholecystography, vestibular disorders, epilepsy (monotherapy), and radiological contrast agent. It can also be used in adjunctive treatment as a substitute drug of choice in hyperthyroidism.

**Stability and Storage Conditions:** Iopanoic acid should be stored below 40°C (preferably at 15-30°C). Upon exposure to light, it turns dark, thus should be stored at room temperature away from sunlight in tightly-closed light-resistant containers.

**Type of Pharmaceutical Formulation:** Tablets.

**Brand Name:** Telepaque.

### 28.1.3.2. Propyliodone

Propyliodone is an organic molecule which is used as a radiopaque medium for bronchographic use.

**Molecular Formula:**  $C_{10}H_{11}I_2NO_3$

**IUPAC Nomenclature:** propyl 2-(3,5-diiodo-4-oxo-1,4-dihydropyridin-1-yl)acetate

**Physical Properties:** Propyliodone occurs as a white crystalline powder with no taste and odour. It is faintly soluble in water; and soluble in ether and alcohol.

**Chemical Property:** Violet vapours of iodine are liberated when propyliodone is heated with conc. sulphuric acid.

**Uses:** Propyliodone is prescribed in Paget's disease of bone, for investigating fistulae and sinuses, and for bronchography.

**Stability and Storage Conditions:** Propyliodone should be stored in tightly-closed light-resistant containers away from sunlight.

**Type of Pharmaceutical Formulation:** Injections.

### 28.1.3.3. Sulfobromophthalein Sodium

Sulfobromophthalein (BSP) is a dye used for diagnosing hepatic disorders. It is also used for determining proteins quantitatively.

**Molecular Formula:**  $C_{20}H_{10}Br_4Na_2O_{10}S_2$

Diagnostic Agent

**IUPAC Nomenclature:** 2-hydroxy-5-[4,5,6,7-tetrabromo-1-(4-hydroxy-3-sulphophenyl)-3-oxo-2-benzofuran-1-yl]benzenesulfonic acid

**Properties:** Sulfobromophthalein occurs as a white coloured crystalline powder with a bitter taste and no odour. It is water soluble; and insoluble in acetone and alcohol.

**Uses:** Sulfobromophthalein is used as an aid for diagnosing cirrhosis, acute hepatitis, and liver cell damage without cirrhosis. It is an important agent for testing liver function.

**Stability and Storage Conditions:** Sulfobromophthalein remains stable under normal conditions of temperature and pressure. **Sulfobromophthalein solutions** should be stored in a warm place for preventing crystallisation. **Sulfobromophthalein injections** are negatively affected by light, thus should be protected from direct sunlight and stored in moisture-resistant, tightly-closed containers in cool, dry, well-ventilated areas away from incompatible substances.

**Types of Pharmaceutical Formulations:** Injection and solution.