

12.1.3.4. Methohexital Sodium

Methohexital sodium is an intravenous anaesthetic having a short duration of action. It may be used for inducing anaesthesia.

Molecular Formula: $C_{14}H_{17}N_2NaO_3$

IUPAC Nomenclature: 5-hex-3yn-2yl-1-methyl-4, 6-dioxo-5-prop-2-enylpyrimidin-2-olate

Physical Properties: Methohexital sodium occurs as a hygroscopic, white coloured, water-soluble powder with no odour.

Chemical Properties

- 1) On keeping the aqueous solution of methohexital sodium, it decomposes and appears cloudy due to the formation of methohexitone.
- 2) Methohexital sodium produces a precipitate of methohexitone when mixed with acidic solutions.

Uses: Methohexital is prescribed as an intravenous anaesthetic and is also used for inducing deep sedation.

Stability and Storage Conditions: Methohexital sodium is hygroscopic, thus should be stored in tightly-closed containers.

Types of Pharmaceutical Formulation: Injection

Brand Names: Brevital and Breital sodium.

12.1.3.5. Thiopental Sodium

Thiopental sodium is a barbiturate given through intravenous route to induce general anaesthesia or for producing complete anaesthesia for short duration.

Molecular Formula: $C_{11}H_{17}N_2NaO_2S$

IUPAC Nomenclature: 5-ethyl-4, 6-dioxo-5-pentan-2-yl-1H-pyrimidine-2-thiolate

Properties: Thiopental sodium occurs as a yellowish white coloured powder with a characteristic odour and bitter taste. It is hygroscopic in nature. It is readily soluble in water; and nearly insoluble in ether.

Uses: Thiopental sodium is used for hypnosis and for controlling convulsive states. It has been used in neurosurgical patients for reducing the increased intracranial pressure. It is the only anaesthetic agent to be used for short (15 minutes) procedures, for inducing anaesthesia before administering other anaesthetic agents, for enhancing regional anaesthesia, for producing balanced hypnosis during balanced anaesthesia with other agents for analgesia or muscle relaxation, for controlling the convulsive states during or after inhalational or local anaesthesia, in neurosurgical patients having increased intracranial pressure, and for narcoanalysis and narcosynthesis in psychiatric disorders.

Stability and Storage Conditions: Thiopental sodium should be stored in tightly-closed containers as it is hydroscopic in nature and gets decomposed by atmospheric CO_2 .

Types of Pharmaceutical Formulations: Powder for solution and injection.

Brand Names: Pentothal sodium and Intraval sodium.

12.1.3.6. Trichloroethylene

Trichloroethylene is a halocarbon which is generally used as an industrial solvent.

Molecular Formula: C_2HCl_3

IUPAC Nomenclature: 1,1,2-trichloroethene

Properties: Trichloroethylene occurs as a non-flammable, colourless, volatile liquid with a sweet odour. It gets quickly evaporated in air when in liquid form.

Uses: Trichloroethylene is used as a solvent for removing grease from metal parts and as a chemical which is used for making other chemicals, mainly the refrigerant named HFC-134a. It was also used as an anaesthetic for surgery.

Stability and Storage Conditions: Trichloroethylene should be stored in tightly-closed containers in a cool, dry, and ventilated area. It should be protected from any physical damage and should be isolated from heat or ignition sources.

Types of Pharmaceutical Formulation: Liquid

Brand Names: Trimar and Trilene.