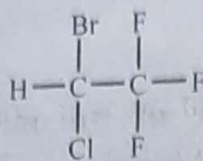


### 12.1.3.1. Halothane

Halothane is a non-flammable, halogenated, hydrocarbon anaesthetic which provides comparatively fast induction with little or no excitement.

#### Chemical Structure



**Molecular Formula:**  $\text{C}_2\text{HBrClF}_3$

**IUPAC Nomenclature:** 2-bromo-2-chloro-1,1,1-trifluoroethane

**Properties:** Halothane occurs as a clear, colourless liquid containing a sweet, pleasant, chloroform-like smell. It is non-combustible, highly volatile substance. It is soluble in water; and miscible in petroleum ether and other fat solvents.

**Uses:** Halothane is prescribed for inducing and maintaining general anaesthesia.

**Stability and Storage Conditions:** Halothane should be stored in closed containers away from light, at room temperature (nearly  $25^\circ\text{C}$ ).

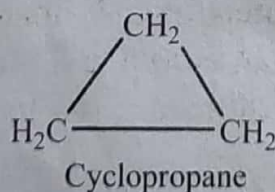
**Types of Pharmaceutical Formulations:** Liquid, inhalant, and solution.

**Brand Name:** Fluothane.

### 12.1.3.2. Cyclopropane

Cyclopropane (or trimethylene) is an explosive and colourless gas used as a general anaesthetic since 1934. It is a cycloalkane containing three carbon atoms to form a ring.

#### Chemical Structure



**Molecular Formula:**  $\text{C}_3\text{H}_6$

**IUPAC Nomenclature:** Cyclopropane

**Properties:** Cyclopropane occurs as an inflammable, colourless gas with a specific odour. It forms an explosive mixture with air. At N.T.P., it is soluble in water at a ratio of 1:2:85. It is readily soluble in alcohol and liquefies at 4 to 6 atmospheric pressure.

**Uses:** Cyclopropane is used as an inhalational anaesthetic.



**Stability and Storage Conditions:** Cyclopropane is stored in orange painted metallic containers which can hold compressed gas. It is kept in a cool room, away from any inflammable material. The name or symbol ' $C_3H_6$ ' should be written on the shoulder and valve of the cylinder.

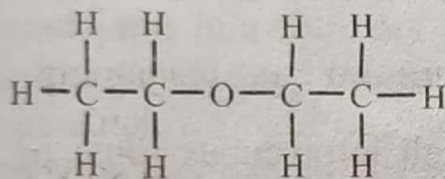
**Types of Pharmaceutical Formulation:** Inhalant.

**Brand Names:** Ciclopropano and Cyclopropan.

### 12.1.3.3. Diethyl Ether

Diethyl ether is an anaesthetic that is an organic compound belonging to the class of compounds known as ethers. Its molecular structure has two ethyl groups joined together with an oxygen atom.

#### Chemical Structure



Diethyl Ether

**Molecular Formula:**  $C_4H_{10}O$

**IUPAC Nomenclature:** Ethoxyethane

**Properties:** Diethyl ether occurs as a clear and colourless mobile liquid with a typical odour and a sweet burning taste. It is highly volatile and inflammable.

**Uses:** Diethyl ether is an anaesthetic in which the safety margin amongst the effective dose and the lethal dose is high hence, allowing anaesthesia to be done in simple conditions with simple equipment and monitoring.

**Stability and Storage Conditions:** Diethyl ether should not be stored in proximity to powerful oxidisers or incompatible materials. It should be kept in tightly-closed and sealed containers, in a cool and well-ventilated separate area, away from ignition sources, heat, moisture, air, and light.

**Types of Pharmaceutical Formulation:** Liquid.

**Brand Name:** Ether Anaesthetic.