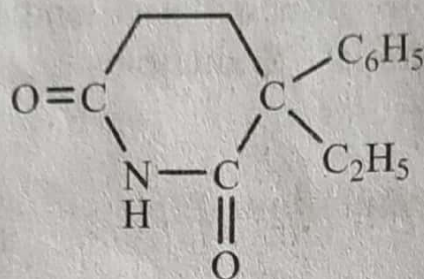


11.1.3.5. Glutethimide

Glutethimide is a pyridine derivative and a fast acting sedative (30 minutes). Its sedation effect lasts for up to 6 hours. Effectiveness lasts for a longer period (5-7 days).

Chemical Structure



Glutethimide

Molecular Formula: C₁₃H₁₅NO₂

IUPAC Nomenclature: 3-ethyl-3-phenylpiperidine-2,6-dione

Chemistry: Glutethimide is a piperidine-2,6-dione derivative containing ethyl and phenyl group at C3.

Properties: Glutethimide occurs as colourless crystals or white powder with no odour and a bitter taste. It is insoluble in water.

Uses: Glutethimide is used as a hypnotic in all types of insomnia. It induces sleep without depressing respiration.

Stability and Storage Conditions: Glutethimide gets affected by air, moisture, and light, thus should be stored away from light in well-closed air-tight containers below 40°C; however, 15-30°C should be preferred, unless otherwise specified by manufacturer.

Types of Pharmaceutical Formulations: Capsule and tablet.

Brand Name: Doriden

11.1.3.6. Methyprylon

Methyprylon is a sedative belonging to piperidinedione derivative family. This drug was used for treating insomnia, but it is now replaced with newer drugs having fewer side effects, like benzodiazepines.

Molecular Formula: $C_{10}H_{17}NO_2$

IUPAC Nomenclature: 3,3-diethyl-5-methylpiperidine-2,4-dione

Properties: Methyprylon occurs as a white crystalline powder with a slight characteristic odour and a burning taste with bitter-after taste. It is water soluble; and very soluble in alcohol.

Uses: Methyprylon is used for treating insomnia.

Stability and Storage Conditions: Methyprylon is affected by air, moisture, and light, thus should be stored away from light in well-closed air-tight containers.

Types of Pharmaceutical Formulations: Oral capsule and tablets.

Brand Names: Dimerin, Noctan, and Noludar.

11.1.3.7. Paraldehyde

Paraldehyde (the cyclic trimer of acetaldehyde molecules) was presented into clinical practice in the UK by **Vincenzo Cervello** (Italian physician) in **1882**. It is a CNS depressant and also found to be an anticonvulsant, hypnotic, and sedative.

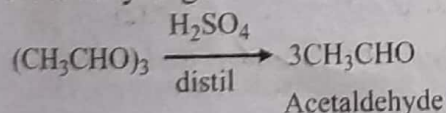
Molecular Formula: $C_6H_{12}O_3$

IUPAC Nomenclature: 2,4,6-trimethyl-1,3,5-trioxane

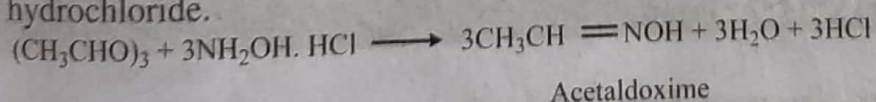
Physical Properties: Paraldehyde occurs as a clear, colourless or pale yellow coloured liquid with an unpleasant acrid taste and a strong characteristic ethereal odour. It is readily soluble in water; and miscible in alcohol.

Chemical Properties

1) Paraldehyde gets converted to acetaldehyde, when distilled with conc. H_2SO_4 .



2) Paraldehyde gives acetaldoxime and releases equivalent amount of hydrochloric acid when treated with alcoholic solution of hydroxylamine hydrochloride.



Uses: Historically, paraldehyde was used as a sedative and hypnotic. It is also used as an anticonvulsant for the treatment of seizures.

Stability and Storage Conditions: Paraldehyde undergoes oxidation in the atmosphere and gives peroxidised compound in large amounts. This reaction is catalysed by diffused light, thus paraldehyde should be stored in well-closed small, well-filled bottles, in a cool and dark place.

Types of Pharmaceutical Formulations: Intramuscular and intravenous injection, solution, and liquids.

Brand Name: Paral.

11.1.3.8. Triclofos Sodium

Triclofos sodium is a phosphate ester of trichloroethanol and a prodrug. It gets hydrolysed to give trichloroethanol, which contains the sedative-hypnotic activity.

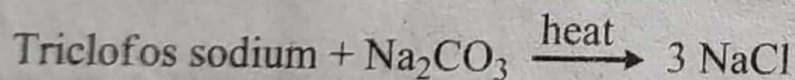
Molecular Formula: $C_2H_3Cl_3NaO_4P$

IUPAC Nomenclature: 2,2,2-trichloroethyl hydrogen phosphate

Physical Properties: Triclofos sodium occurs as a white coloured hygroscopic powder with no odour and a saline taste. It is readily soluble in water; and less soluble in alcohol. Its aqueous solution has acidic pH.

Chemical Properties

- 1) On heating triclofos sodium with anhydrous sodium carbonate, sodium chloride is formed due to the combination of chlorine with sodium.



- 2) Aqueous solution of triclofos sodium decomposes slowly and releases chloride and phosphate ion.
- 3) Triclofos sodium undergoes hydrolysis in the stomach due to acidic medium and gives trichloroethanol which gets readily absorbed.

Uses: Triclofos sodium is used as a hypnotic and sedative. It is preferred over paraldehyde as hypnotic and sedative as it is more palatable, does not cause gastric irritation, is stable, and non-corrosive to skin and mucous membrane.

Stability and Storage Conditions: Triclofos sodium is decomposed by air and moisture as it is hygroscopic in nature. Therefore, it should be stored in tightly-closed, moisture-proof containers.

Types of Pharmaceutical Formulations: Syrup, solution, elixir, and tablets.

Brand Names: Foskid, Nucloryl, Pedicloryl, Silence, Tricloryl, and Triclotross.