

UNIT – 4

Expectorants:

1. Potassium Iodide:

- **Preparation:** Potassium iodide is prepared by mixing iodine with potassium hydroxide or potassium carbonate.
- **Assay:** It can be assayed using a standardized solution of sodium thiosulfate.
- **Properties:** Potassium iodide is a white, crystalline powder with a salty taste.
- **Medicinal Uses:**
 - Used as an expectorant to help clear mucus and treat respiratory conditions like chronic bronchitis and asthma.

2. Ammonium Chloride (NH₄Cl):

- **Preparation:** Prepared by the reaction between ammonia and hydrochloric acid.
- **Assay:** Assayed by titration with a strong base.
- **Properties:** It is a white crystalline powder with a salty taste.
- **Medicinal Uses:**
 - Acts as an expectorant to help clear mucus in the airways.
 - Used to treat metabolic alkalosis.

Emetics:

1. Copper Sulphate (Copper Sulphate):

- **Preparation:** Prepared by dissolving copper in dilute sulfuric acid.
- **Assay:** Assayed by titration or colorimetry.
- **Properties:** It is a blue crystalline solid.
- **Medicinal Uses:**
 - Used as an emetic to induce vomiting in cases of poisoning.

2. Sodium Potassium Tartarate:

- **Preparation:** Also known as "Rochelle salt," it is prepared by reacting potassium bitartrate with sodium carbonate.
- **Assay:** Assayed by various methods, including titration.
- **Properties:** It is a white crystalline powder.
- **Medicinal Uses:**
 - Used as an emetic in cases of poisoning.

Haematinics:

1. Ferrous Sulphate (Iron (II) Sulphate):

- **Preparation:** Prepared by reacting iron with sulfuric acid.
- **Assay:** Assayed by complexometric titration.
- **Properties:** It is a greenish-blue crystalline solid.
- **Medicinal Uses:**
 - Used as a haematinic to treat iron-deficiency anemia by supplementing iron in the diet.

2. Ferrous Gluconate:

- **Preparation:** It is prepared by reacting iron with gluconic acid.
- **Assay:** Assayed by complexometric titration.
- **Properties:** It is a pale green to blue-green powder.
- **Medicinal Uses:**
 - Used as a haematinic for the treatment of iron-deficiency anaemia.

Poison and Antidote:

1. Sodium Thiosulfate:

- **Preparation:** Prepared by neutralizing sulphur dioxide with sodium hydroxide.
- **Assay:** Assayed by titration or colorimetry.
- **Properties:** It is a colourless, crystalline powder.
- **Medicinal Uses:**
 - Used as an antidote for cyanide poisoning by forming the less toxic thiocyanate in the body.

2. Activated Charcoal:

- **Preparation:** Produced by heating carbon-rich materials to high temperatures in the presence of gas.
- **Properties:** It is a black, porous material with a large surface area.
- **Medicinal Uses:**
 - Used as an antidote to adsorb toxins in cases of poisoning.

3. Sodium Nitrite:

- **Preparation:** Prepared by mixing sodium hydroxide with nitrous acid.
- **Assay:** Assayed by titration or chemical tests.

- **Properties:** It is a white crystalline powder.
- **Medicinal Uses:**
 - Used as an antidote for cyanide poisoning by converting haemoglobin to methaemoglobin, which binds cyanide.

Astringents:

1. **Zinc Sulphate:**

- **Preparation:** Prepared by reacting zinc with sulfuric acid.
- **Assay:** Assayed by titration or chemical methods.
- **Properties:** It is a white crystalline powder.
- **Medicinal Uses:**
 - Used as an astringent in various medical and cosmetic applications.

2. **Potash Alum (Aluminium Potassium Sulphate):**

- **Preparation:** Prepared by the crystallization of a solution containing aluminium sulphate and potassium sulphate.
- **Assay:** Assayed by gravimetry, titration, or instrumental methods.
- **Properties:** It is a colourless crystalline substance.
- **Medicinal Uses:**
 - Used as an astringent and antiseptic.