

## 2)Potassium Permanganate

**Chemical Formula:-** $\text{KMnO}_4$

**Mol Wt:-**158.03

### **Physical Properties:-**

- **Colour:** Dark Purple
- **Odour:-** odourless.
- **Nature:-** metallic prisms, almost opaque with blue metallic lustered
- **Taste :-** sweet
- **Solubility:-.** practically soluble in water, & more in boiling water.

## Chemical properties:-

- When heated it decomposes at high temp ( 240°C)



- It is a powerful oxidizing agent  
in **acidic solution** it is reduced from Mn+7 to Manganous ion Mn+2 with evolution of O<sub>2</sub>.



- In neutral or alkaline media also O<sub>2</sub> is liberated .It brings bleaching Action.
- KMnO<sub>4</sub> oxidize alcohol to Aldehyde
- Sulphide to Sulphur
- Ferrous Salt to Ferric
- Nitrites to nitrates
- Iodide to free iodine in acidic condition

- **Incompatibility** It is incompatible with **iodides, reducing agents** and most organic matter.
- **Storage:-** It should be stored in **tightly-closed container** & should **handled with care** since **explosion** may occur when it comes in contact with **oxidisable substance**

# Uses:-

1.It is a topical anti-infective (antibacterial and anti-fungal). (*anti-infective due to the oxidizing property.*)

2.It stains the skin & tissues.

Sol in 1:5000-1:15000 conc. it is used in cleaning wounds & ulcers for skin infection caused by bacteria & fungi.

3.It is also used as an **antidote in barbiturate & alkaloidal** poisoning. (*A sol of 1: 5000 when used as gastric wash, oxidises poison & prevents their absorption.*)

# Compound acting by Halogenation Mechanism:-

## 1. CHLORINATED LIME:-

**Chemical formula**  $\text{Ca}(\text{ClO})_2$

**Synonym** Bleaching Powder, Chloride of Lime.

### **Physical Properties:**

**Colour:-** white powder

**Odour:-** characteristic odour

**Solubility:-** slightly soluble in water and in alcohol.

**Storage:** It should be stored in tightly closed containers. It is affected by moisture & heat.

## Preparation:-

It is manufactured by the action of **chlorine on calcium hydroxide**

i.e.. The slaked lime is spread on shelves in suitable container

Chlorine gas is introduced at the top of chamber & passed through the contents of the shelves.

this is usually done at  $25^{\circ}$  thus minimizing the formation of calcium chloride. when abs of chlorine is completed, powdered lime is blown into the chamber to absorb the excess of chlorine.

## **USES:-**

- It is used as **disinfectant & bleaching agent**.
- It shows **bactericidal action**.
- It is used to disinfect faeces, urine , sputum& other organic material.
- It is employed for disinfecting drainages.
- It is a powerful bleaching agent .Its powerful bleaching action must be considered while disinfecting coloured materials.
- it is used as 1-2 g/l for sterilization of water.  
The treated water should be exposed to air & allowed to settle before use.
- Chlorinated lime is used in the preparation of surgical chlorinated soda solution, employed as a wound disinfectant.