

EMETICS

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Emetics are the drugs which enhance emesis (vomiting) by which the contents in the stomach get expelled through the oral cavity. These emetics are useful in treatment of poisoning.

Mechanism of action: Emetics act either directly by stimulation of the chemoreceptor trigger zone, located in the area of postrema of medulla oblongata; or by reflux action of irritant on gastrointestinal tract.

Examples: Inorganic compounds such as copper Sulphate, sodium chloride, Zinc sulphate and antimony potassium tartrate show emetic effect.

Emetics are contraindicated in debilitated patients and in poisoning caused by corrosive or petroleum products.

Copper sulphate: (CuSO₄.5H₂O)

Synonyms: Cupric sulfate

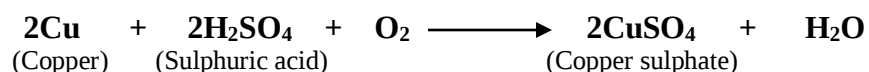
Molecular weight: 157.6 g/mol

Standards: It should contain not less than 98.5% and not more than 101% of copper sulphate

Properties:

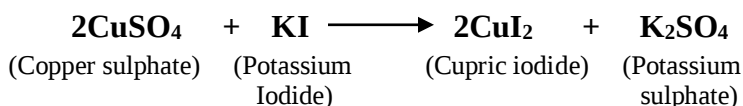
- **Appearance:** It is blue crystalline granules or powder
- **Solubility:** freely soluble in water, slightly soluble in methanol, practically insoluble in alcohol.

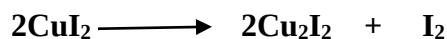
Preparation: It is obtained by treating granulated copper in the presence of air with sulphuric acid. The oxygen of air assists the reaction. The solution is filtered, and evaporated to crystallization. Then the crystals of copper sulphate separated out.



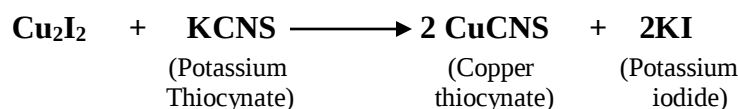
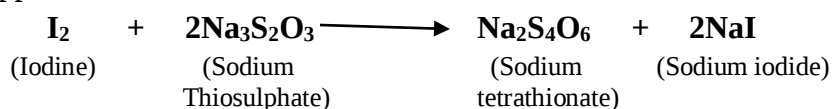
Assay: Its principle is based on the instability of the cupric iodide which is formed in the reaction between CuSO₄ and KI and which decomposes to yield Cu₂I₂ with the liberation of free iodine.

- Accurately weighed quantity of copper sulphate is dissolved in water.
- To this a slight excess of potassium iodide is added followed by acetic acid.
- The liberated iodine is titrated with standard sodium thiosulphate solution by using starch as an indicator.
- The titration is continued until faint blue color persists.





- Further, 2gm of potassium thiocyanate is added and titration is continued until the blue color disappeared.



Each 1mL of 0.1 N $\text{Na}_2\text{S}_2\text{O}_3$ is equivalent to 0.02497gm of copper sulphate.

Uses:

- It is used as an emetic agent
- It is used in treatment of phosphorus poisoning as an antidote.
- It also used externally as an astringent and also as a fungicide (1.5% solution)
- It is an ingredient in Benedict's and Fehling's reagent.

Storage: It has to be protected from air, heat and moisture. So, it is stored in well closed air tight container.