

## Haematinics

- ⇒ A haematinic is a nutrient required for the formation of the blood cell.
- ⇒ A compound that contains iron salt is called haematinic agent.
- ⇒ They are used in the treatment of Iron deficiency disease, e.g. Anaemia.

Example :- ~~Iron~~

Ferrous sulfate ( $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ )

Ferrous Fumarate.  $(\text{OOC}-\text{CH}=\text{CH}-\text{COO}^-)\text{Fe}^{2+}$

Ferrous Gluconate  $[\text{HOCH}_2(\text{CHOH})_4\text{COO}^-]_2\text{Fe}^{2+} \cdot 2\text{H}_2\text{O}$

Iron and Ammonium citrate.

Iron Dextran Injection.

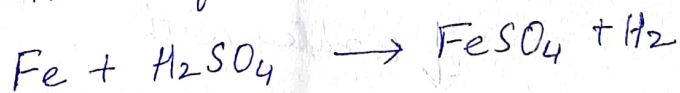
~~Ferro~~ Ferrous Sulfate :-

$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ , M.W = 278.0

IP limit :- It contains not less than 98.0% of  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ .

Preparation :-

Ferrous sulfate is prepared by adding a slight excess of iron to dilute  $\text{H}_2\text{SO}_4$ .

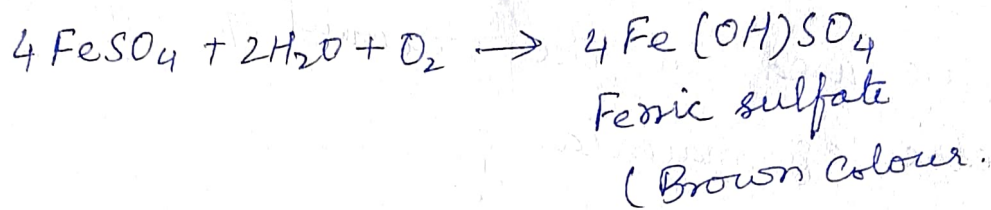


Properties :-

→ It occurs as odourless bluish-green crystalline powder

→ On exposure to moist air it is oxidized and becomes brown in colour due to the formation of basic sulfate.

- It is completely dissolved in water.
- It is stored in tightly-closed container.
- Ferrous sulfate is oxidised to convert ferric sulfate on exposure to air.



### Assay:-

- Assay is based on oxidation-reduction (redox) titration.
- Acidified solution of the substance is titrated with ceric ammonium sulfate, in the presence of  $\text{H}_2\text{SO}_4$ .
- Ferrous sulfate solution as an indicator.

### Method:-

weighed amount of  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  (1 gm)

↓ dissolve in  $\text{H}_2\text{O}_2$  (30 ml)

solution

↓ add  $\text{H}_2\text{SO}_4$  (20 ml)

To make it acidified

↓ titrated with

~~0.1N~~ ceric

0.1N ceric ammonium sulfate

↓ using indicator

Ferrous solution.

Each ml of 0.1N ceric ammonium sulfate is equivalent to 0.0278 g of  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ .

- Iron and its official compounds are used haematinic agent.
- They are also used in the treatment of iron deficiency eg anaemia.
- There are some official compound of Iron.

Ferrous sulphate -  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$

Ferrous Fumarate.  $\text{C}_4\text{H}_2\text{FeO}_4 \text{ FeC}_2\text{H}_4(\text{CO}_2)_2$

Ferrous Gluconate.  $\text{FeC}_{12}\text{H}_{22}\text{O}_{14} \cdot 2\text{H}_2\text{O}$

Ferric Ammonium Citrate.

Iron Dextran Injection

Dried Ferrous Sulphate.

Ferrous Sulphate:-

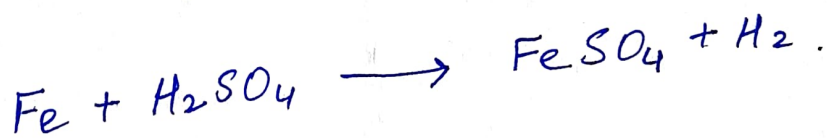
$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  -

Mol. Weight - 278.0

Ferrous sulphate contain not less than 98.0% of  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ .

Preparation.

Ferrous sulphate is prepared by adding a slight excess of Iron to dilute sulphuric acid.



Physical properties:-

- It is odourless bluish-green crystal
- Its taste metallic and astringent.