ASSAY OF FERROUS SULPHATE

Laboratory for the third stage

Organic Pharmaceutical Chemistry

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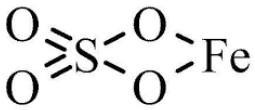
Aim:

Determine the percentage purity of given sample of ferrous sulphate **($FeSO_4$)**.

CHEMICAL STRUCTURE OF FERROUS SULPHATE



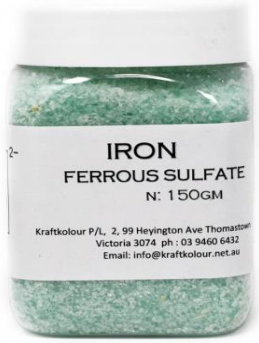
CHEMICALS USED:

Ferrous sulphate, Oksalik asit , Potasyum Permanganat and H_2SO_4.

PRINCIPLE:

1. About Ferrous Sulfate

Ferrous sulfate is a type of iron. You normally get iron from the foods you eat. In your body, iron becomes a part of your hemoglobin and myoglobin. Hemoglobin carries oxygen through your blood to tissues and organs. Myoglobin helps your muscle cells store oxygen.



Ferrous Sulfate is an essential body mineral. Ferrous sulfate is used to treat iron deficiency anemia (a lack of red blood cells caused by having too little iron in the body).

Iron helps the body to make healthy red blood cells, which carry oxygen around the body. Some things such as blood loss, pregnancy or too little iron in your diet can make your iron supply drop too low, leading to anemia.

Ferrous sulfate may also be called by the brand names Feospan, Ferrograd, and Ironorm drops.

2. Side Effecte Ferrous Sulfate

oral tablet, oral elixir, oral liquid, oral solution, oral syrup

Accidental overdose of drugs that have iron in them is a leading cause of deadly poisoning in children younger than 6 years of age. Keep away from children.

What are some side effects that I need to call my doctor about right away?

That may be related to a very bad side effect:

Signs of an allergic reaction, like rash; hives; itching; red, swollen, blistered, or peeling skin with or without fever; wheezing; tightness in the chest or throat; trouble breathing, swallowing, or talking; unusual hoarseness; or swelling of the mouth, face, lips, tongue, or throat.

black, tarry, or bloody stools.

PROCEDURE:

1- Preparation of 0.1 Oxalic acid

Dissolve 0,45 g of $C_2H_2O_4$ in 100 ml of distal water then add 0.1 ml or 3 drop of sulphuric acid in the mixture and heat of 60 C^o until the mixture is smooth.

2- Standardization 0f 0.1 M Potasyum Permanganat.

Weigh accurately 1.58 g of Potasyum Permanganat in watch glass then add 200 mL distal water and stirrer the maxcer at 60 C^O for 1 hour and transferred to a 500 mL conical flask add 300 mL distal water completed the mix to 500 ml .

3- Assay of $FeSO_4$

1- Add 0.76 g of $FeSO_4$ and 100 ml water
2- Add 0.1 ml or 3 drop of sulphuric acid as indicator shake well,
3- Then titrate with 0.1N $KMnO_4$ stander solution until purple colour disappears.
4- Percentage purity can be determined by the following formula.

$$\% = \frac{\text{Titre value x Equivalent wt factor x Normality of titrant(actual)}}{\text{Normality of titrant (expected)}} \text{---------- Weigh of sample x100}$$

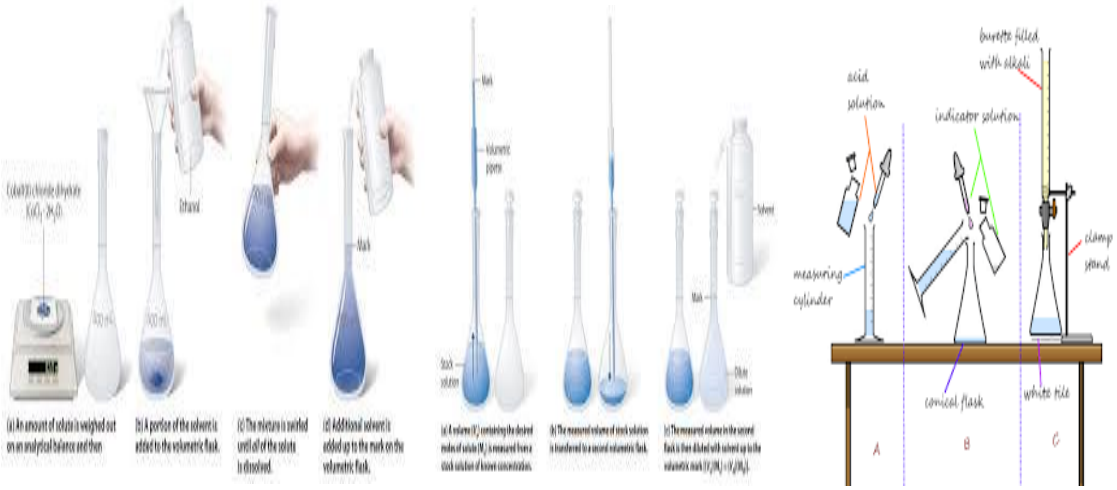
REPORT: The percentage purity of Ferrous sulphate is……

The process steps for the experiment are illustrated in pictures

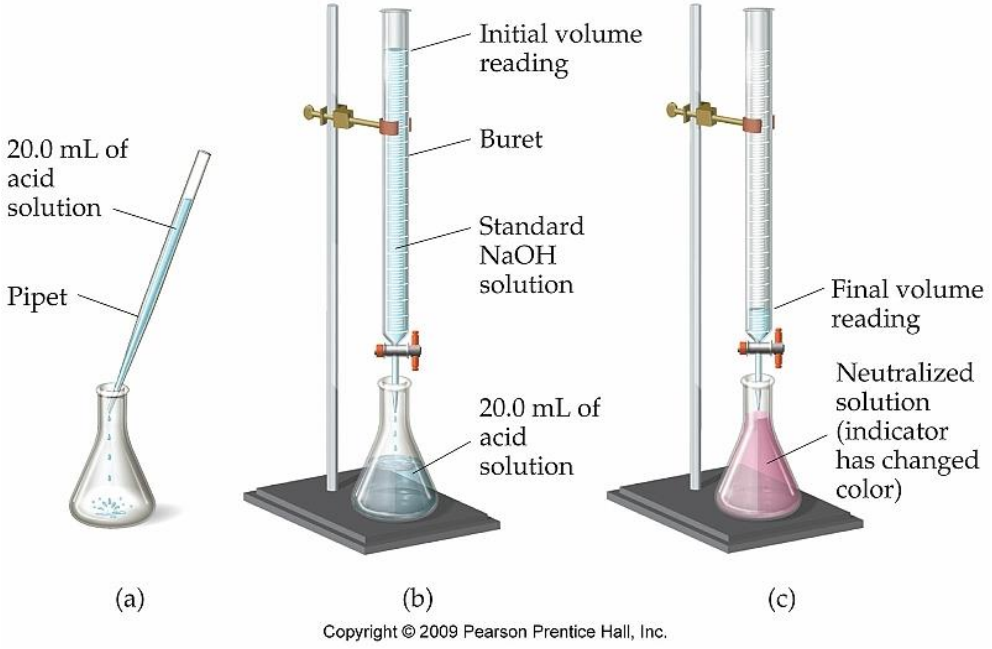
1- Weight of materials

2- Preparation of standard solutions

3- Prepare the laboratory glass for the experiment



4- Titration



5- Calculate the experiment:

%=

Titretion value = from buret ?

Equivalent wt factor

Normality of titrant(actual)

Normality of titrant (expected)

Weigh of sample

6- Writing a report on the experiment.