

Types of reactions I

✚ WHAT IS THE AIM OF THIS PRACTICAL?

To learn to identify different types of reactions.

✚ WHAT DO YOU NEED?

Materials:

| Test tube holder | Test tube | Bunsen burner | Litmus paper strips | Safety goggles |
|---|---|---|--|---|
|  |  |  |  |  |

Chemicals: Ferrous sulphate crystals

✚ A BIT OF THEORY

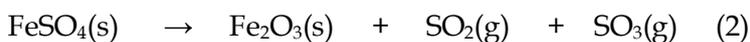
Ferrous sulphate crystals are ferrous sulphate heptahydrate with a chemical formula $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ and are green in colour.

On heating the ferrous sulphate heptahydrate it loses seven water molecules to form anhydrous ferrous sulphate (FeSO_4) and is white in colour. The reaction is as follows:



(Green colour) (white colour)

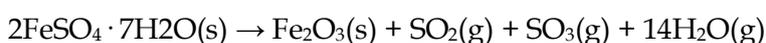
Ferrous sulphate when heated is decomposed to ferric oxide, sulphur trioxide, and sulphur dioxide. The reaction is as follows:



(White colour) (brown colour) (colourless) (colourless)

In the reaction (2) one substance FeSO_4 (Ferrous sulphate) splits into three substances ferric oxide (Fe_2O_3), sulphur dioxide (SO_2), and sulphur trioxide (SO_3) due to heat.

We can combine reaction (1) and (2) and write it as follows:



✚ WHAT DO YOU HAVE TO DO?

- 1) Wash a test tube with distilled water and dry it.
- 2) Take 2 g of ferrous sulphate crystals in the tube.
- 3) Make a note of the colour of the crystals.
- 4) Use a test tube holder to hold the boiling tube.
- 5) Heat the boiling tube on the bunsen burner.
- 6) Observe the colour of the residue got and smell the odour of the gases evolved.
- 7) Tiny colourless water droplets are seen near the neck of the tube.
- 8) Gently turn it towards your nose and smell for any gas evolved.
- 9) Wet blue and red litmus paper strips.
- 10) Hold the litmus paper strips near the mouth of the boiling tube.
- 11) Observe the change

✚ QUESTIONS

- 1) Ferrous sulphate crystals are also called...?
- 2) What do you observe in the step number 6?
- 3) What do you observe in the step number 11?
- 4) Classify the type of reaction according to the change in structure of the substances and taking into account that some heat is absorbed by the reactant in order to turn into products.
- 5) What is the colour of the residue left in the boiling tube after the decomposition reaction?

 **FEED-BACK**

Evaluate the difficulty of this practical. Circle the number that suits the level of difficulty you found while going through this practical:

Very Easy 1 2 3 4 5 *Very Difficult*

Did you enjoy going through this practical? Circle the number that suits your choice



Not at all

1

2

3

4

5

Very much

