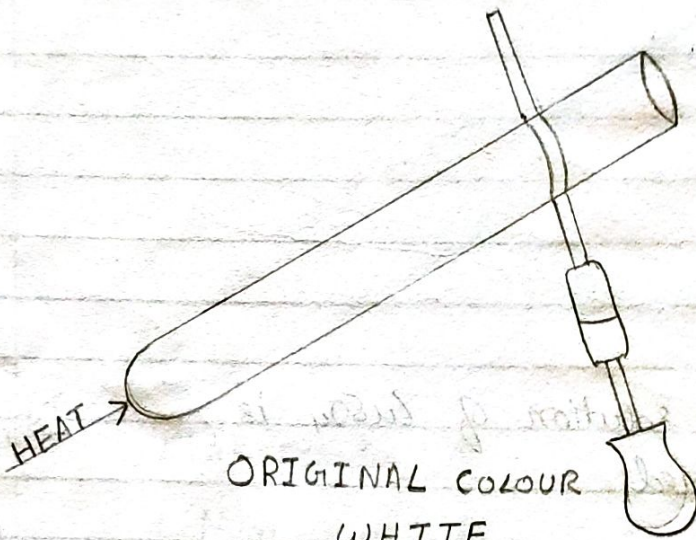


LEAD NITRATE



DRY TEST TUBE HEATING OF LEAD NITRATE $[Pb(NO_3)_2]$

The sample supplied is a white crystalline solid of lead nitrate.

PHYSICAL CHARACTERISTICS

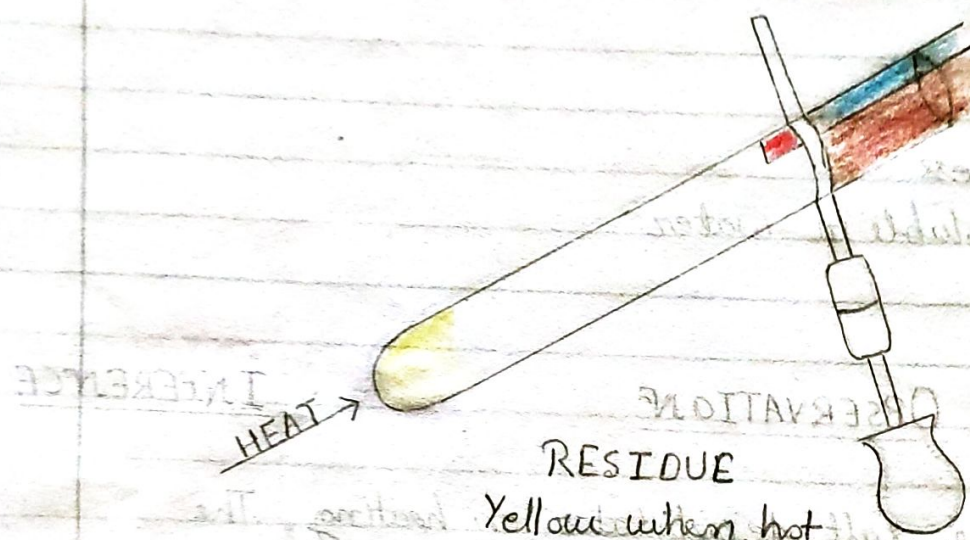
- Colour - white
- Crystalline
- Odour - Odourless
- Solubility - Soluble in water

<u>EXPERIMENT</u>	<u>OBSERVATION</u>	<u>INFERENCE</u>
A small amount of the sample is taken in a test tube and heated first gently and then strongly.	The salt decomposes on heating, melts and forms a yellow residue. The residue is yellow when hot and cold $2Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 + O_2$ (yellow when hot and cold) A colourless, odourless gas is evolved which rekindles a glowing splinter	The residue is O_2 The gas is O_2
	Evolution of a reddish brown gas	

TEST TUBE HEATING OF LEAD NITRATE (Pb(NO₃)₂)

PHYSICAL CHARACTERISTICS

Dense reddish-brown fumes of NO₂



EXPERIMENT

OBSERVATIONS

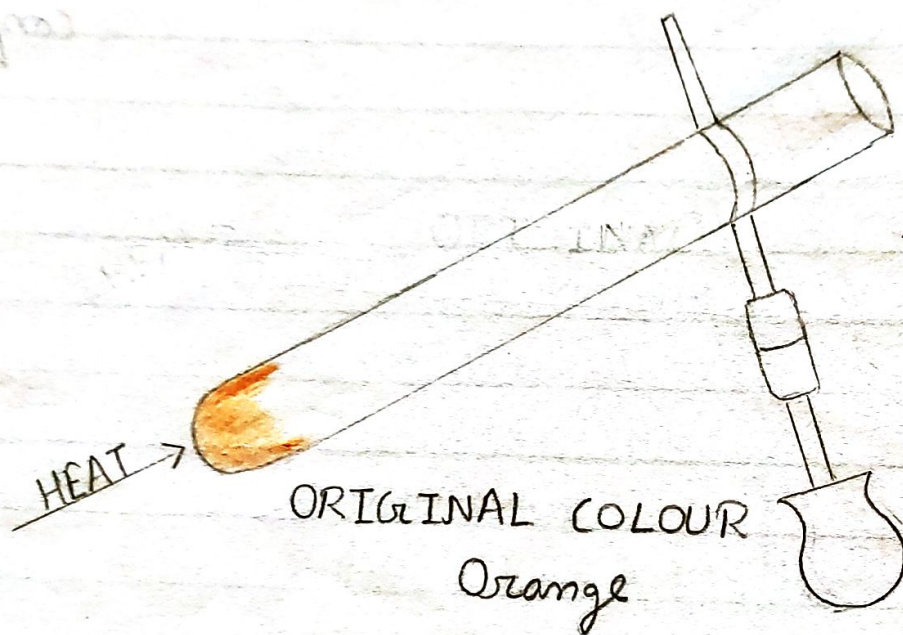
RESIDUE

Yellow when hot

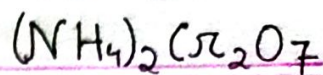
and cold

The gas is passed through acidified FeSO_4 solution	The green solution turns black	NO_2 gas is present Sample is $\text{Pb}(\text{NO}_3)_2$ confirmed.
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AMMONIUM DICHRONATE



DRY TEST TUBE HEATING OF AMMONIUM DICHROMATE



The sample supplied is an orange coloured crystalline salt.

PHYSICAL CHARACTERISTICS

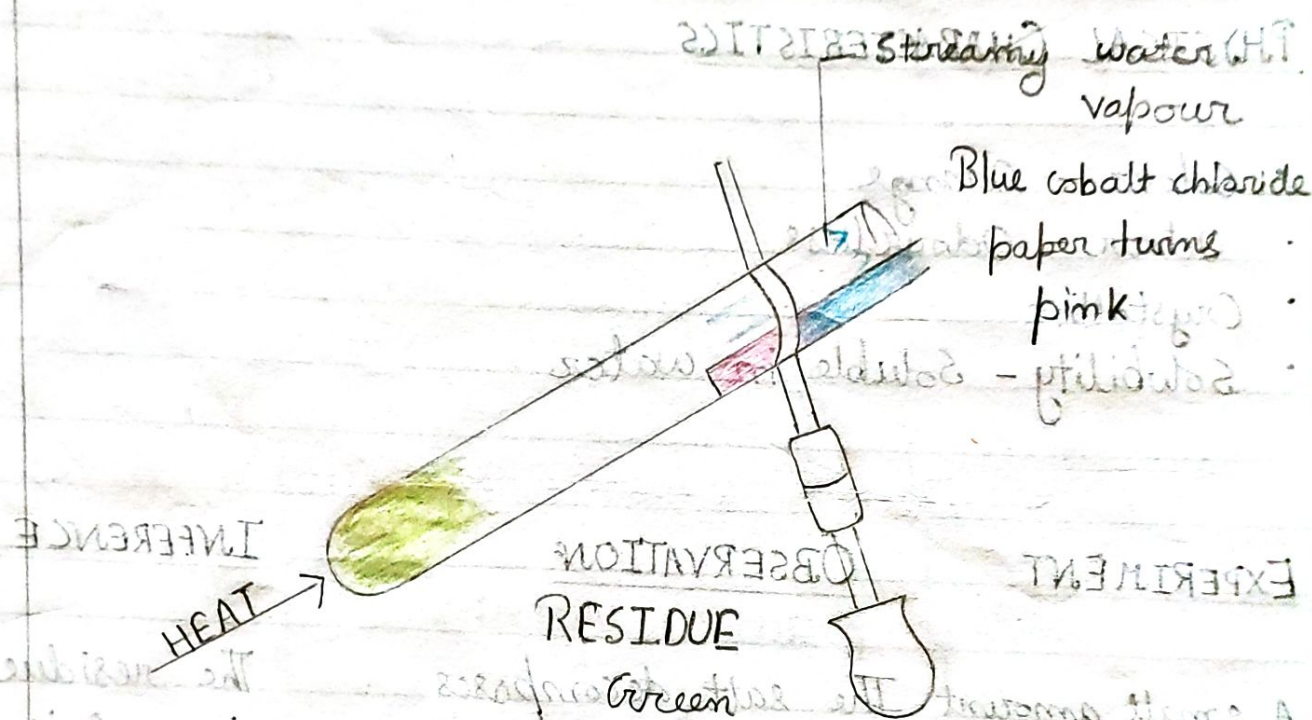
- Colour - Orange
- Odour - Odourless
- Crystalline
- Solubility - Soluble in water

<u>EXPERIMENT</u>	<u>OBSERVATION</u>	<u>INFERENCE</u>
1. A small amount of the sample is taken in a clean dry test tube and heated first gently and then strongly.	The salt decomposes violently with flashes of light leaving a voluminous green residue.	The residue formed is of chromic oxide.

TEST TUBE HEATING OF AMMONIUM DICHROMATE

0.5g (0.01)

The sample is placed in a test tube and heated.



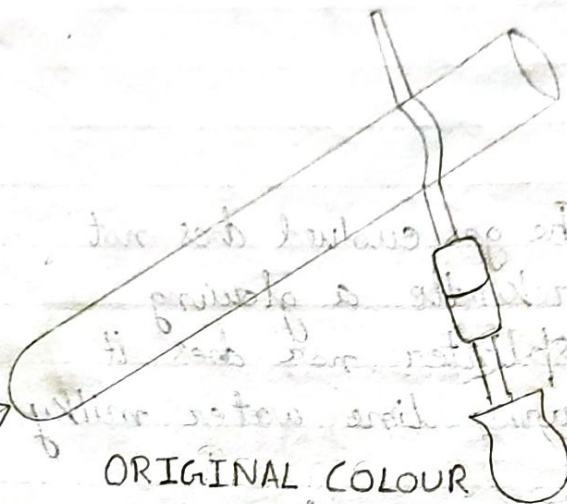
The residue formed is a green oxide.

A small amount of the sample is placed in a test tube and heated. The residue is a green oxide. The test tube is held at an angle to the flame. The residue is a green oxide.

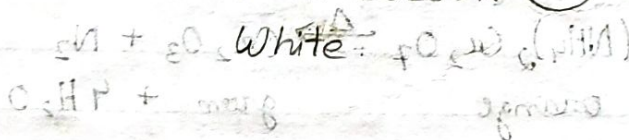
2. Blue cobalt chloride paper is touched to the gas evolving out of the test tube.	The blue cobalt chloride paper turns pink.	Water vapour is formed.
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3. The gas is evolved	The gas evolved does not rekindle a glowing splinter nor does it turn lime water milky $(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \xrightarrow{\Delta} \text{Cr}_2\text{O}_3 + \text{N}_2 + 4\text{H}_2\text{O}$ orange green	The gas is nitrogen and the sample is ammonium dichromate
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WASHING SODA



ORIGINAL COLOUR



DRY TEST TUBE HEATING OF WASHING SODA



The sample supplied is white sodium carbonate also called washing soda.

PHYSICAL CHARACTERISTICS

- Colour - White
- Crystalline
- Odour - Odourless
- Solubility - Soluble in water

<u>EXPERIMENT</u>	<u>OBSERVATION</u>	<u>INFERENCE</u>
A portion of the sample is taken in a test tube and heated first gently and then strongly.	The white crystalline solid on heating swells and then melts giving steamy vapours which condenses on the cooler region of the test tube to form tiny droplets of colourless liquid.	
	A colourless liquid when added to white anhydrous CuSO_4 turns it blue in colour.	The gas evolved is water vapour confirmed.

DRY TEST TUBE HEATING OF WASHING SODA

10/10/18

The sample is affected by white vapours and the colour changes to blue.

PHYSICAL CHARACTERISTICS

BLUE Cobalt

chloride paper

turns to pink

PINK

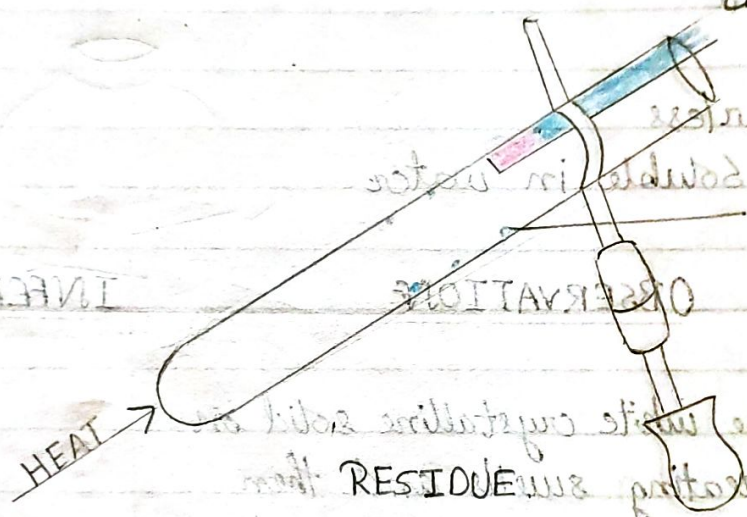
Water vapours

soluble in water

INFERENCE

OBSERVATIONS

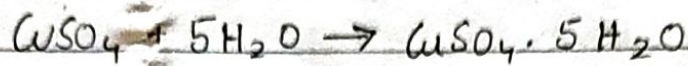
EXPERIMENT



HEAT → The white crystalline solid at the bottom of the test tube turns to a white powder. The colour of the test tube changes from blue to pink. The residue is white. The colour of the test tube changes from blue to pink. The residue is white. The colour of the test tube changes from blue to pink. The residue is white.

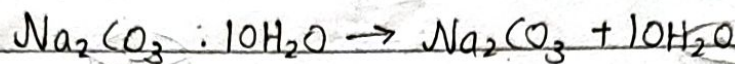
A portion of the sample is taken in a test tube and heated first gently and then strongly.

The gas evolved is added to white anhydrous cobalt chloride. It turns it blue in confirmation.



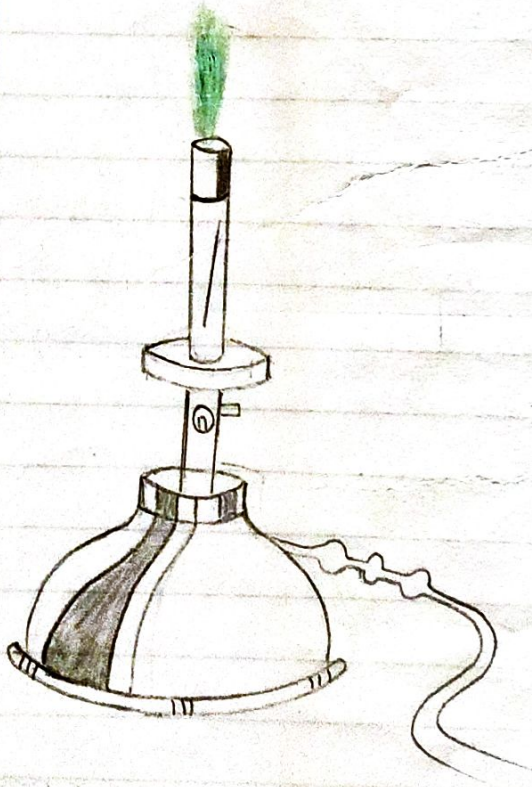
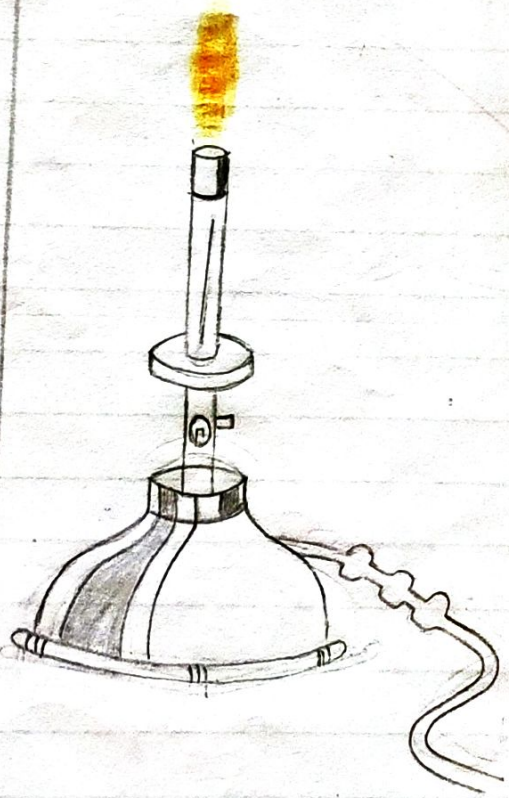
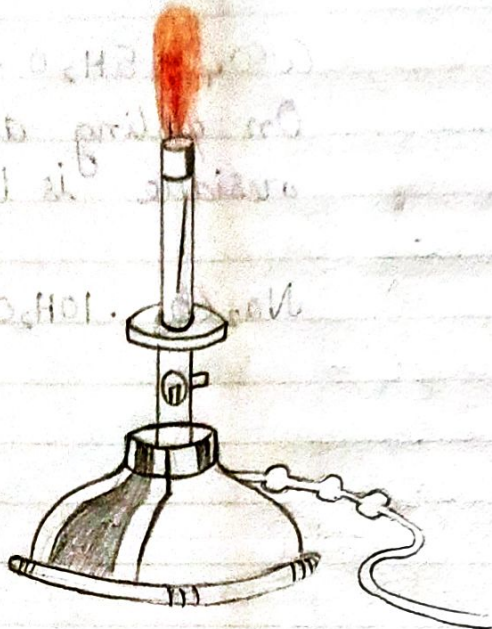
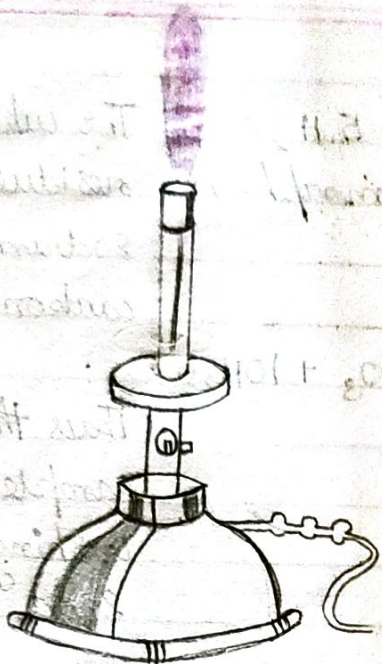
On cooling a white amorphous residue is left.

The white residue is sodium carbonate



Thus the sample is washing soda.

30/04/17



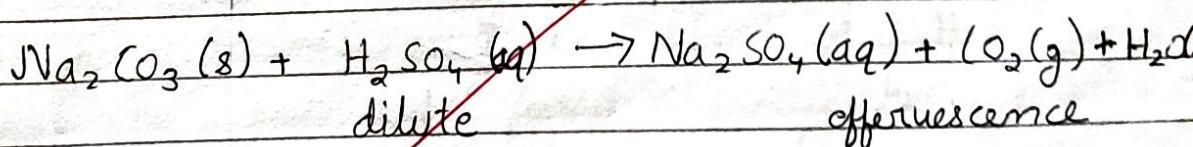
pg 100.50

APPLICATION OF FLAME TEST

METHOD	Colour imparted to the flame	Colour through blue glass	Metallic radical
• When the wire imparts no colour it is dipped in conc. HCl and then into the substance to be identified.	Lilac	Violet	Potassium [K ¹⁺]
• The wire is then re-introduced into the non-luminous flame and the colour imparted is noted.	Brick red	Pale green	Calcium [Ca ²⁺]
• Thin platinum wire is thoroughly cleaned and then heated - in a non-luminous flame of a burner.	Golden yellow	Pale yellow	Sodium [Na ¹⁺]
• The wire is then re-introduced into the non-luminous flame and the colour imparted is noted.	Peacock bluish green	Bluish green	Copper [Cu ²⁺]

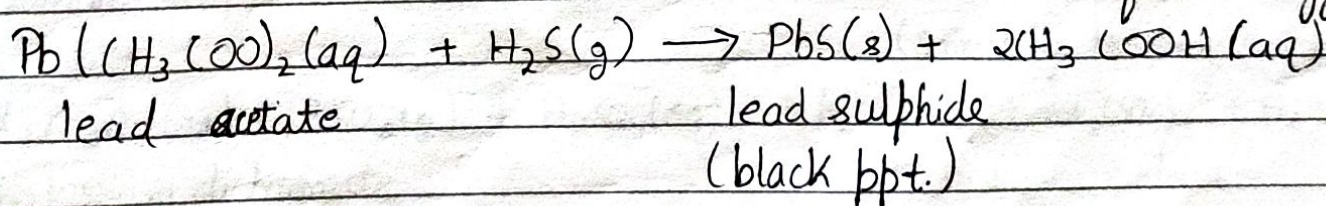
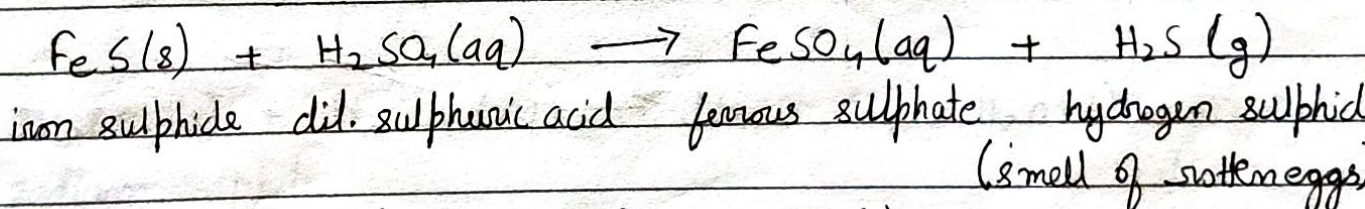
ACTION OF DILUTE SULPHURIC ACID ON A SUBSTANCE

EXPERIMENT	OBSERVATION	GAS EVOLVED	INFERENCE
Take about 0.2 g of the salt in a test tube, and add about 1 mL of dilute H_2SO_4 (or dilute HCl). Note, if a reaction takes place in cold. If not, warm (do not heat strongly), and observe the occurrence of any reaction. Identify the evolved gases by their colour, odour and chemical tests.	Brisk effervescence. The evolved colourless gas turns lime water milky.	CO_2 gas	Carbonate (CO_3^{2-})



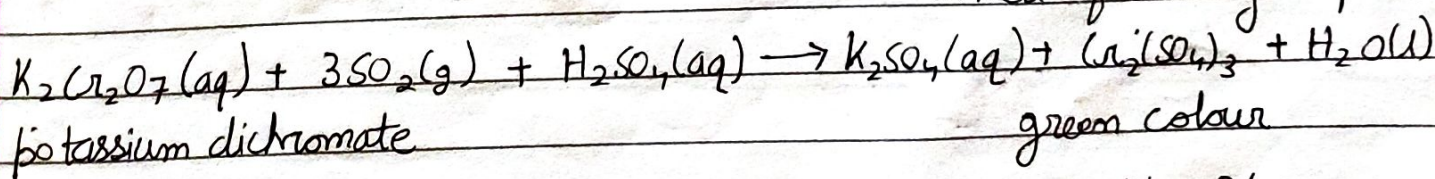
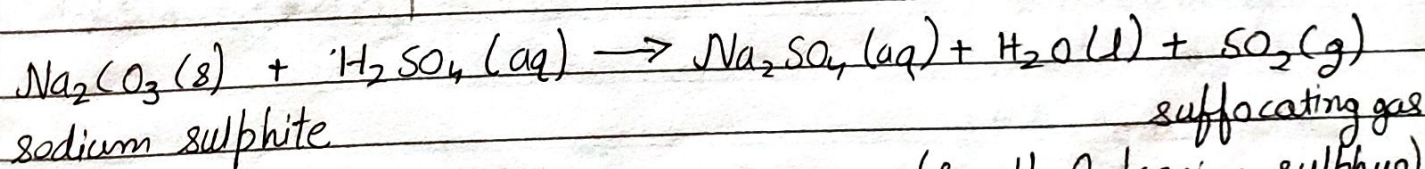
ACTION OF DILUTE SULPHURIC ACID ON A SUBSTANCE

EXPERIMENT	OBSERVATION	GAS EVOLVED	INFERENCE
Take about 0.2g of the salt in a test tube, and add about 1 ml of dilute H_2SO_4 (or dilute HCl). Note if a reaction takes place in cold. If not, warm (do not heat strongly), and observe for the occurrence of any reaction. Identify the evolved gas by their colour, odour and chemical tests	A colourless gas with a smell of rotten eggs. The gas turns lead acetate paper black.	H_2S gas	Sulphide (S^{2-})



ACTION OF DILUTE SULPHURIC ACID ON A SUBSTANCE

EXPERIMENT	OBSERVATION	GAS EVOLVED	INFERENCE
Take about 0.2 g of the salt in a test tube, and add about 1 mL of dilute H_2SO_4 (or dilute HCl). Note, if a reaction takes place in cold. If not, warm (do not heat strongly), and observe for the occurrence of any reaction. Identify the evolved gases by their colour, odour and chemical tests	A colourless suffocating gas (smell of burning sulphur). A strip of filter paper soaked in acidified $K_2Cr_2O_7$ solution kept near to the mouth of the test tube.	SO_2 gas turns green	sulphite (SO_3^{2-})



Expt No. 15

ACTION OF DILUTE SULPHURIC ACID ON A SUBSTANCE

<u>EXPERIMENT</u>	<u>OBSERVATION</u>	<u>Gas evolved</u>	<u>Inference</u>
Take 0.2gm of a substance in a test tube and add about 1ml of dil H_2SO_4 (or dil HCl) Note if the reaction takes place in cold. If not warm and note for the occurrence of the reaction. Identify the evolved gas by their colour odour and chemical test	A colourless, odourless gas is evolved which extinguishes a burning splinter with a pop sound	H_2 gas	The substance is an active metal