

TENDER HEART HIGH SCHOOL, SEC-33B, CHD

CLASS - IX

SUBJECT - CHEMISTRY

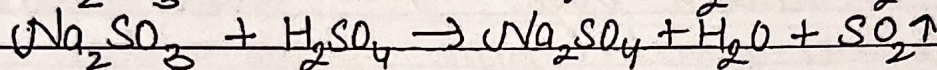
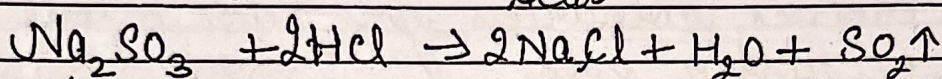
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5. Sulphur dioxide.

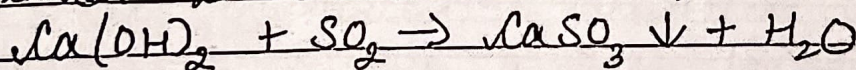
Preparation:- Add dil. HCl or dil. H_2SO_4 to metallic sulphites.

Metal / Hydrogen sulphite + dil. Acid $\rightarrow$ Salt + Water + Sulphur dioxide



Recognition and Identification of gas.

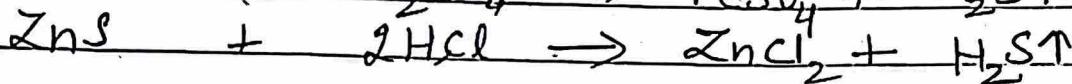
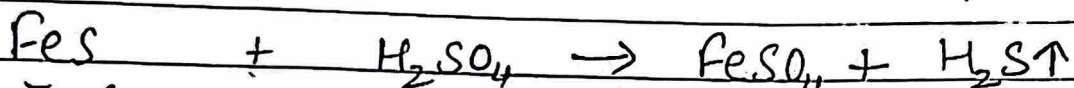
- (i) It evolves colourless gas with smell of burning sulphur (a suffocating odour)
- (ii) It extinguishes the burning wooden splinter in sulphur dioxide.
- (iii) It turns moist blue litmus red and finally bleaches it. This is temporary.
- (iv) The gas turns lime water turbid (milky). (Similar to carbon dioxide.)

7. Hydrogen sulphide

Preparation:-

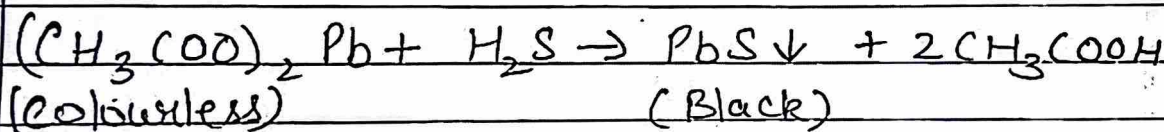
Add dil. HCl or dil. H_2SO_4 to metallic sulphides like ZnS , PbS etc

Metal + dil. Acid $\rightarrow$ Salt + Hydrogen Sulphide

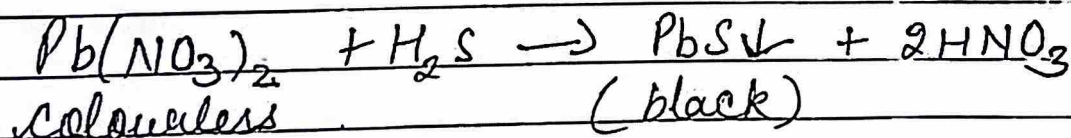


Recognition and Identification

- (i) It evolves colourless gas with a foul smell as of rotten eggs.
- (ii) It turns moist blue litmus red.
- (iii) It turns lead acetate paper black.



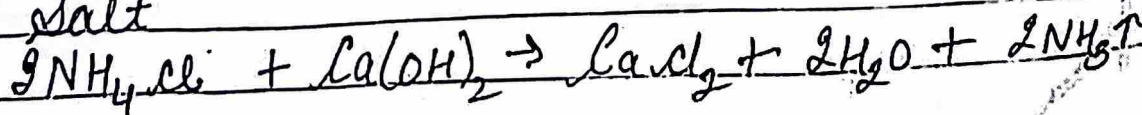
- (iv) It also turns lead nitrate solution black.



8. Ammonia

Preparation:- Add alkali to ammonium salt like ammonium chloride or ammonium sulphate and heat.

Ammonium + alkali $\rightarrow$ Salt + Water + Ammonia



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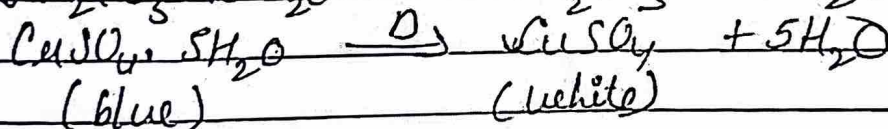
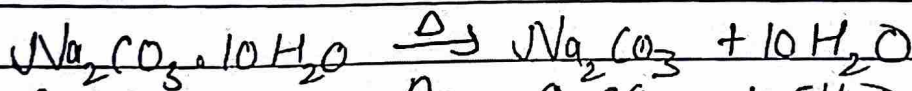
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Recognition and Identification of Ions.

- (i) It evolves colourless with a characteristic sharp, pungent smell.
- (ii) It turns moist red litmus blue.
- (iii) It turns colourless Nessler's reagent, [i.e. (K_2HgI_4) potassium mercuric iodide.] brown.

9. Water vapour

Preparation:- Heat a crystalline substance like hydrated sodium carbonate or hydrated copper sulphate.



Recognition and Identification

- (1) It evolves colourless & odourless vapours condense to form a clear liquid on the cooler part of the test-tube.
- (2) It is neutral to litmus
- (3) This liquid turns anhydrous copper sulphate from white to blue.



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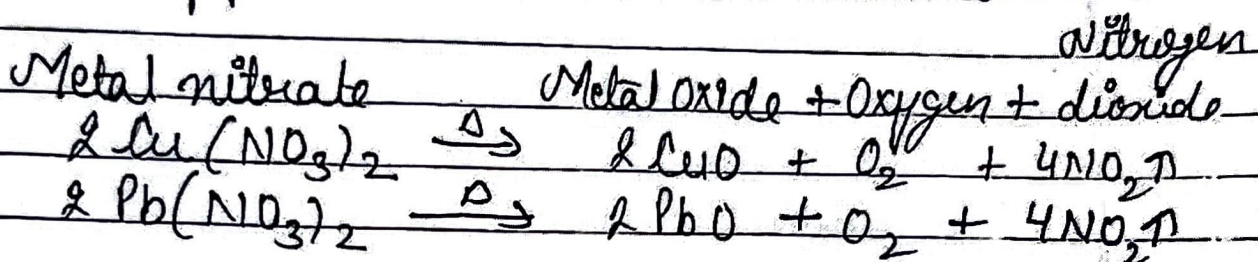
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10. Nitrogen dioxide

Preparation:- Heat a heavy metal nitrate like copper nitrate or lead nitrate.



Recognition and Identification of Gas

- (i) The gas is brown in colour, has an irritating (pungent) odour & is non-combustible.
- (ii) It turns moist blue litmus paper red.
- (iii) It liberates iodine (violet vapours) from potassium iodide (KI) solution or turns potassium iodide paper brown.



- (iii) It turns green acidified ferrous sulphate solution brown.

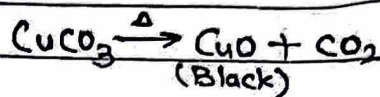
Action of Heat On A Given (Unknown) Substance.

(P.T.O.)

Observation

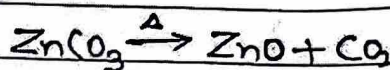
Identification of Substance

A1. (i) Light green amorphous powder turn to black, on strong heating
(ii) Turn lime water milky



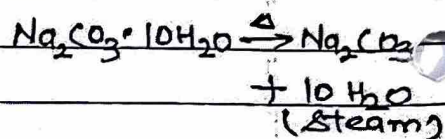
Gas evolved is CO_2

2. (i) On strong heating the light, amorphous white solid, changes to pale yellow



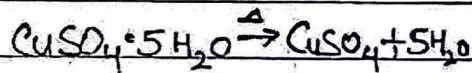
Gas evolved is CO_2

B1. (i) White crystalline solid, on strong heating, swells, crumbles and then melt, giving steamy vapour.
(ii) On cooling, a white amorphous residue is left



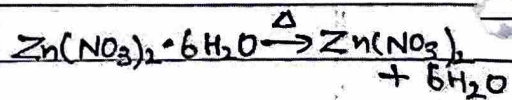
Gas evolved is water vapour

2. (i) Blue crystal solid, on heating, crumbles to form a white amorphous powder

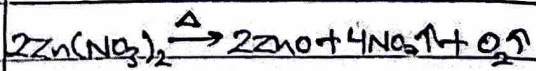


Gas evolved are SO_2 and O_2

C1. (i) Blue crystalline solid, on heating crumble to form a white amorphous powder



(ii) The evolved gas turn moist blue litmus red and changes colour of acidified $\text{K}_2\text{Cr}_2\text{O}_7$ solution from orange to green

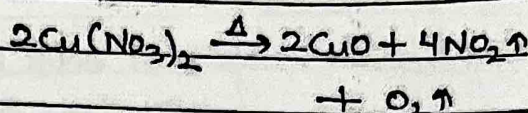
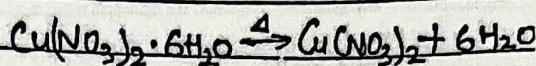


Gas evolved are water vapour nitrogen dioxide and oxygen

Observation

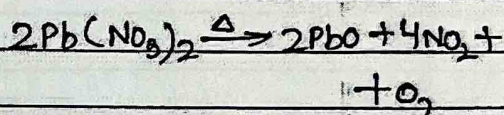
Identification of substance

2. (i) Bluish green crystal solid on heating melt to form green mass and give off steamy vapours that condense on cooler part of test tube to form droplet of liquid (water)
(ii) It also give us a gas that rekindles a glowing splinter i.e. oxygen



Gas evolved are water vapour, nitrogen dioxide, and oxygen.

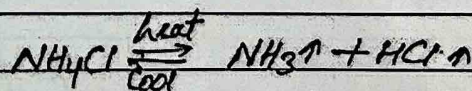
3. (i) Heavy white crystalline solid, on strong heating, crumbles with a cracking noise



- (ii) The residue is redish brown when hot. On cooling it changes to yellow partly fuses in green and stain it yellow.

Gas evolved are nitrogen dioxide and oxygen.

- DL. (i) White crystalline solid on strong heating sublimated to form a basic gas (NH_3) and acidic gas (HCl)
(ii) No residue is left behind.



Substance is ammonium chloride.

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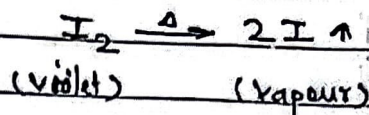
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Observation

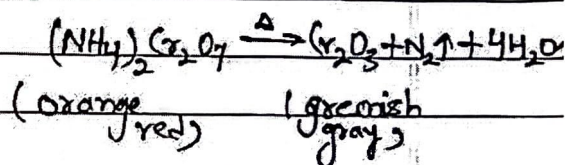
Identification of substance

2. (i) Violet crystalline solid on strong heating sublimates to form violet vapours. These vapours settled down on cooler part of test tube to form violet crystal.
- (ii) These vapours turn paper dipped in silver nitrate solution yellow.



Substance is Iodine.

3. (i) Orange red crystalline solid on strong heating, swells up and decompose violetly with flashes of light leaving green residue.
- (ii) Greenish grey mass of Chromium oxide is left behind.



Gas evolved are water vapour and nitrogen.

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