MITRIC ACID: AS AN CXIDISING AGENT

Nitrie acid vigorously oxidises non-metals (metals), inorganic compounds and organic substances. compounds and organic substances.

typical acid except for its ne action with metals

except does not liberate hydrogen

since it does not liberate hydrogen

tubion it aires and descent oxygen

which it gives on decomposition.

2HNO3 (cona) -> 2NO2+ 40+[0] 24NO3 (dil.) -> 2NO + 40+[0]

* Nitrue acid is a powerful oxidising agent bethe nascent oxygen formed on decomposition oxidises hydrogen to water.

(1) Action on non-metals:

Non-metal + Acid (conc.) -> Oxidised product + Water+ Nitrogen dioxì de

C + 4HNO3 -> CO2 + 2420 + 4NO2 Caubon

S + 64NO3 - 42SO4 + 2430 + 6NO2 Sulphur

(2) Action on metals: [Copper

(a) Cold & dilute nitric acid

3 Cu + 8 HNO3 -> 3 Cu(NO3), + 4H20 + 2NO Nitrue oxide Copper nitrate.

(b) Conc. nitruic acid [or hot dilute HND3]:

au + 4HNO3 -- au(NO3), + 2H2O + 2NO2 Mitrogendioxide Copper nitrate

| # MESTS FOR NITRIC ACID AND NIRATES; |
|---|
| 1. Conc. HND3 gives 5 sown fumes on heating. 4HND3 $\xrightarrow{\Delta}$ 2H20 + 4ND2 + 02 Brown fumes |
| 2. Nitrates (other than K, Na, NHy) produce reddish brown fumes of NO2. Metallic nitrate Metallic oxide + NO2+O2 |
| In adding copper to HNO_3 or acidified nitrates — dense reddish brown funes of NO_2 are evolved. Cu + $4HNO_3$ \longrightarrow $Cu(NO_3)_2 + 2H_1O + 2NO_2$ |
| Cu + 4NaNO3 + 4H ₂ SO4 \longrightarrow 4NaHSO4 + Cu(NO3) ₂ + aH ₂ O + 2NO2 4. Brown Ring Test; Nitrate |
| restry prepared Pesou + NO -> Fesou NO I Nitroso Jevraus sulphate |
| # EFFECTS OF HEAT ON NITRATES. |
| 1. Sodium si potassium nitrates or alkali metal nitrates: |
| $2 \text{ NaNO}_3 \xrightarrow{\Delta} 2 \text{ NaNO}_2 + O_2 \uparrow$ $2 \text{ KNO}_3 \xrightarrow{\Delta} 2 \text{ KNO}_2 + O_2 \uparrow$ colourless couptailine Metal † 1102 † 02 |
| 2) All other nitrates (except those of Agarty) decomposes into their oxides, No. 200 |
| elevites, crystalline write Reddish brown gas Tinc nitrate $2 \text{ In (NO_3)}_2 \xrightarrow{D} 2 \text{ NO_2 (9)} + O_2$ lead nitrate $2 \text{ In (NO_3)}_2 \xrightarrow{D} 2 \text{ NO_2 + O_2}$ lead nitrate $2 \text{ In (NO_3)}_2 \xrightarrow{D} 2 \text{ Nous (olowdess, (rystalline)} 2 \text{ Nous solid fuses with glass.}$ Copper nitrate $2 \text{ (u (NO_3)}_2 \xrightarrow{D} 2 \text{ CuD} + 4 \text{ NO_2} + O_2$ Colowdess, (rystalline) $2 \text{ CuD} + 4 \text{ NO_2} + O_2$ Colowdess, (rystalline) $2 \text{ CuD} + 4 \text{ NO_2} + O_2$ Colowdess, (rystalline) $2 \text{ CuD} + 4 \text{ NO_2} + O_2$ Colowdess, (rystalline) $2 \text{ CuD} + 4 \text{ NO_2} + O_2$ Colowdess, (rystalline) $2 \text{ AgNO_2} \xrightarrow{D} 2 \text{ Ag} + 2 \text{ NO_2} + O_2$ Colowdess, (rystalline) $2 \text{ AgNO_2} \xrightarrow{D} 2 \text{ Ag} + 2 \text{ NO_2} + O_2$ |
| Mercuric nitrate $Hg(NO_2)_2 \xrightarrow{\omega} Hg + 2NO_2 + O_2$ White, Erystalline Silver mirror (4) Ammonium nitrate $NHyNO_3 \xrightarrow{\omega} N_2O(g) + 2H_2O(vap.)$ Colouries Crystalline Nitrous oxide |
| Colourtess Crystalline Nitrous exide |