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Chemistry . C. CHAUDHARY

BROMINE: Bromine (Br_2) exist in liquid form with yellow colour. It causes injury on skin, therefore use of liquid Br_2 in laboratory is done with cautiously.

Br_2 is prepared as follows.

Reaction of KBr, MnO_2 and Conc H_2SO_4 on heating gives Br_2

$$2KBr + 2H_2SO_4 \rightarrow 2KHSO_4 + 2HBr$$

$$MnO_2 + H_2SO_4 \rightarrow MnSO_4 + H_2O + O$$

$$2HBr + O \rightarrow H_2O + Br_2$$

$$2KBr + 3H_2SO_4 + MnO_2 \rightarrow 2KHSO_4 + MnSO_4 + 2H_2O + Br_2$$

(ii) Reaction of KBr with Cl_2 gives Br_2

$$2KBr + Cl_2 \rightarrow 2KCl + Br_2$$

Properties of Br_2

(a) Non-Metals such as Phosphorus reacts with Bromine and forms Phosphorus tribromide.

$$2P + 3Br_2 \rightarrow 2PBr_3$$

Phosphorus tribromide

(b) Bromine reacts with Metal such as Sodium and forms Sodium Bromide

$$2Na + Br_2 \rightarrow 2NaBr$$

(c) Br_2 reacts with Dilute KOH and forms Bromide and Hypobromite

$$2KOH + Br_2 \rightarrow KBr + KBrO + H_2$$

(d) Bromine oxidises H_2S (Hydrogen sulphide) into sulphur

$$H_2S + Br_2 \rightarrow 2HBr + S$$

In this reaction oxidation No. of 'S' changes -2 to '0' means oxidation takes place.