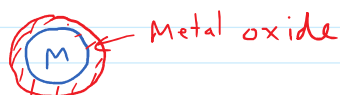


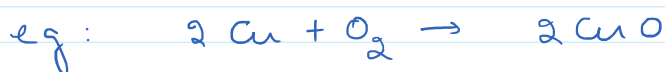
## Chemical Properties of Metals

### Reaction of metals with air

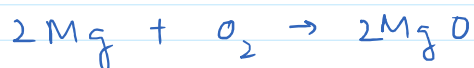
1. Sodium and potassium react vigorously that they catch fire if kept in open, hence to protect them and prevent accidental fires, they are kept immersed in kerosene.
2. At ordinary temperature, the surfaces of metals such as magnesium, aluminium, zinc, lead etc are covered with a thin layer of oxide. This protective oxide layer prevents the metal from further oxidation.

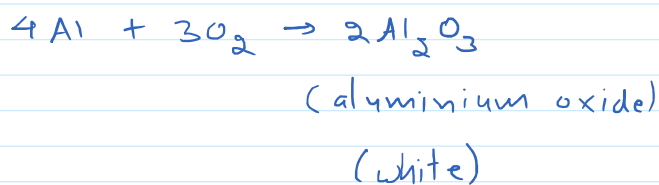


3. Iron does not burn on heating but iron filings burn vigorously when sprinkled in the flame of the burner.
4. Copper does not burn, but hot metal is coated with a black coloured layer of copper(II) oxide ( $\text{CuO}$ )
5. Silver and gold do not react with oxygen even at high temperature.
6. Almost all metals combine with oxygen to form metal oxides



(copper(II) oxide)  
(black)

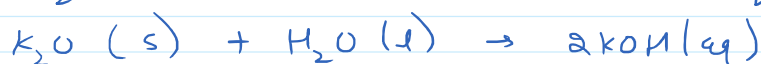
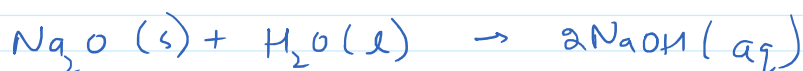




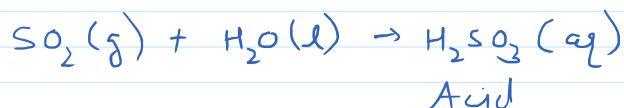
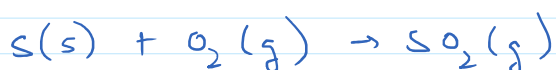
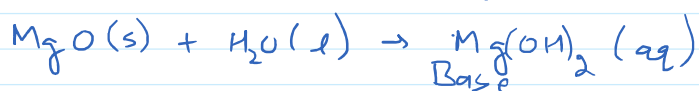
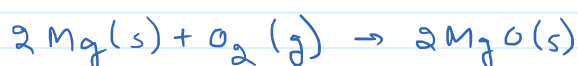
• Properties of metal / non metal oxides

1. Most metal oxides are insoluble in water (like Al, Cu, Fe, Pb, Zn).

2. Some metal oxides dissolve in water to form alkalies.  
(like Na, K)

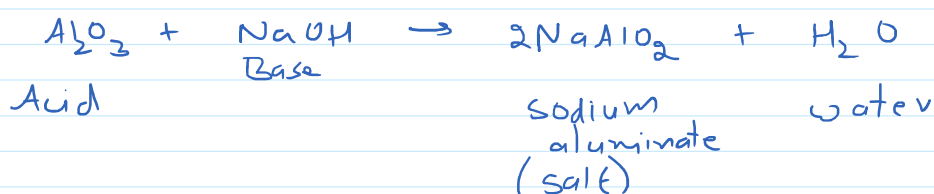
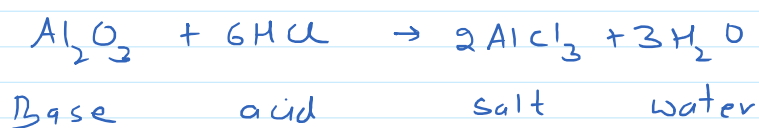


3. Metal oxides are basic in nature, non metal oxides are acidic in nature.



4. Amphoteric oxides

Some metal oxides such as aluminium oxide, zinc oxide etc show both acidic as well as basic behaviour. Such metal oxides which react with both acids as well as bases to produce salt and water are known as amphoteric oxides



Be Sn Ga Zn Pb  
Al