

CHEMISTRY STUDY MATERIALS FOR CLASS 10

(NCERT Based notes of Chapter -03)

GANESH KUMAR

DATE:- 15/05/2021

METALS AND NON-METALS

CHEMICAL PROPERTIES OF METALS

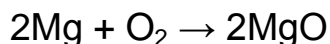
REACTION WITH OXYGEN:

Most of the metals form respective metal oxides when react with oxygen.

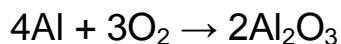


Examples:

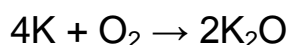
- Reaction of magnesium metal with oxygen: Magnesium metal gives magnesium oxide when reacts with oxygen. Magnesium burnt with dazzling light in air and produces lot of heat.



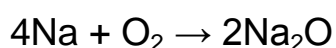
- Reaction of aluminium metal with oxygen: Aluminium metal does not react with oxygen at room temperature but it gives aluminium oxide when burnt in air.



- Reaction of potassium with oxygen: Potassium metal forms potassium oxide when reacts with oxygen.

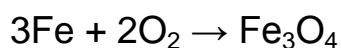


- Reaction of sodium with oxygen: Sodium metal forms sodium oxide when reacts with oxygen.



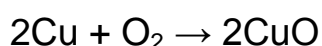
Lithium, potassium, sodium, etc. are known as alkali metals. Alkali metals react vigorously with oxygen.

- Reaction of Iron metal with oxygen: Iron does not react with oxygen at room temperature. But when iron is heated strongly in air, it gives iron oxide.

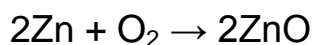


Iron fillings give sparkle in flame when burnt.

- Reaction of copper metal with oxygen: Copper does not react with oxygen at room temperature but when burnt in air, it gives copper oxide.



- Reaction of zinc metal with oxygen: Zinc does not react with oxygen at room temperature. But it gives zinc oxide when heated strongly in air.



REACTION OF METALS WITH WATER:

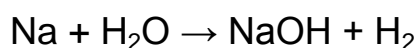
Metals form respective metal hydroxide and hydrogen gas when react with water.



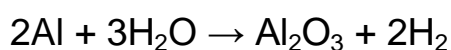
Most of the metals do not react with water. However, alkali metals react vigorously with water.

Examples:

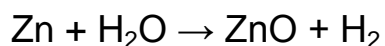
- Reaction of sodium metal with water: Sodium metal forms sodium hydroxide and liberates hydrogen gas along with lot of heat when reacts with water.



- Reaction of aluminium metal with water: Reaction of aluminium metal with cold water is too slow to come into notice. But when steam is passed over aluminium metal; aluminium oxide and hydrogen gas are produced.

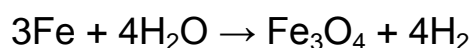


- Reaction of zinc metal with water: Zinc metal produces zinc oxide and hydrogen gas when steam is passed over it. Zinc does not react with cold water.

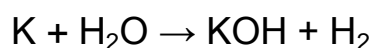


- Reaction of Iron with water: Reaction of iron with cold water is very slow and come into notice after a long time. Iron forms rust (iron oxide) when reacts with moisture present in atmosphere.

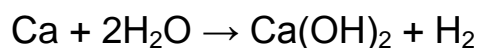
Iron oxide and hydrogen gas are formed by passing of steam over iron metal.



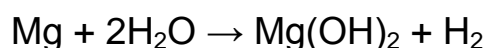
- Reaction of potassium metal with water: Potassium metal forms potassium hydroxide and liberates hydrogen gas along with lot of heat when reacts with water.



- Reaction of calcium metal with water: Calcium forms calcium hydroxide along with hydrogen gas and heat when reacts with water.



- Reaction of magnesium metal with water: Magnesium metal reacts with water slowly and forms magnesium hydroxide and hydrogen gas.



- When steam is passed over magnesium metal, magnesium oxide and hydrogen gas are formed.

