

Metal + Water

Metal + Water -> Metal Hydroxide + Hydrogen
 $Mg(s) + 2H_2O(l) \rightarrow Mg(OH)_2(aq^*) + H_2(g)$

*Aqueous: Chemical substance that is in the form of a solution in water

Metal + Oxygen

Metal + Oxygen -> Metal Oxide
 $2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

Corrosion and Rusting

Rusting -> chemical reaction where iron reacts with oxygen and water to form a reddish-brown substance called rust. Occurs because of oxidation.

Corrosion -> Formation of compounds of metals due to oxidation reaction.

Prevent -> Painting/coating, Galvanization, Stainless steel, Powder coating

Factors Influencing -> High temperature, acidic PH, oxygen, high flow velocity

Aluminum & Titanium -> Form an oxide layer to be stronger (Does not weaken the iron structure)

Properties of Alloys and Their Uses

Alloys -> Mixture of two or more metals

Properties and Uses of Metals

Conductors of heat and electricity (copper, electrical wiring)	Malleable and Ductile (aluminum, airplanes and cans)
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High melting points and are solid at room temperature, except mercury (iron, cooking pans)	Shiny (gold and silvers, jewelry and electronics)
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Strong and Durable (iron and steel, buildings and machines)

Metal + Acids

Metal + Acid -> Salt + Hydrogen gas
 $Zn(s) + 2HCl(aq) \rightarrow ZnCl_2(aq) + H_2(g)$

Hydrochloric Acid	Chloride
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Sulfuric Acid	Sulfate
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Nitric Acid	Nitrate
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To obtain salt:

1. React metal with acid
2. Filter out excess metal
3. Heat the solution to evaporate water
4. Crystals of salt remain



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