MIND MAP

METALS

Physical Properties

- Solid
- Lustrous
- Malleable and ductile
- Hard and have high density
- Good conductors of heat and electricity
- High melting and boiling points.

Chemical Properties

- React with dilute acids to liberate hydrogen gas
- React with oxygen to form basic oxides
- Do not combine with hydrogen.
- React with water to form metal oxides or metal hydroxides
- Electropositive i.e. form positive ions by losing electrons
- Reducing agents.

NON-METALS

Physical Properties

- Solids, liquids and gases
- Non-lustrous
- Non-malleable and non-ductile
- Varying hardness and have low density
- Poor conductors of heat and electricity.
- Low melting and boiling points.

Chemical Properties

- Do not displace hydrogen on reaction with dilute acids.
- React with oxygen to form acidic or neutral oxides
- Combine with hydrogen to form stable hydrides.
- Do not react with water.
- Electronegative i.e. form negative ions by gaining electrons.
- Oxidising agents.

Corrosion

The eating up of metals by the action of air and moisture or a chemical on their surface.

Alloys

It is a homogeneous mixture of two or more metals (or a metal and non-metals). For e.g.

Rusting

Corrosion of iron. Rust is hydrated iron (III) oxide.

$Fe_2O_3 . xH_2O$

Presence of air and water are the two conditions necessary for rust. It can be prevented by painting, applying grease, by

Ionic Compounds

1. Usually crystalline solids.
2. Have high melting point and boiling point.
3. conduct electricity when dissolved in water or melted.
4. Usually soluble in water and insoluble in organic solvent.

Covalent Compounds

1. Usually liquids / gases, few are solids.
2. Have low melting and boiling point.
3. Do not conduct electricity.
4. Usually insoluble in water and soluble in organic solvents.