

C10 - 0.0 - Methods 10

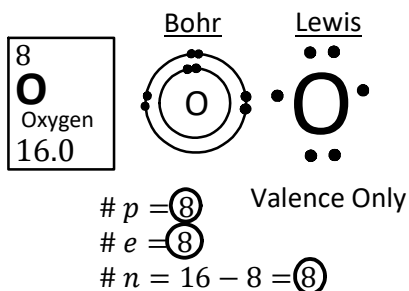
Physical Property : A substance characteristic that can be observed or measured without changing identity of substance. (color, density, hardness, conductivity, melting/boiling points.)

Chemical Property : A substance characteristic observed in a chemical reaction. (flammability, toxicity, acidity, reactivity, chemical stability, heat of combustion.)

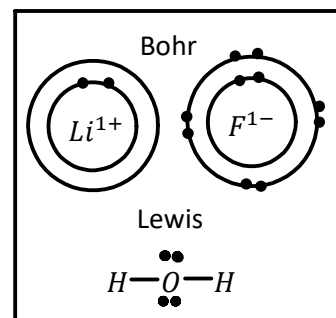
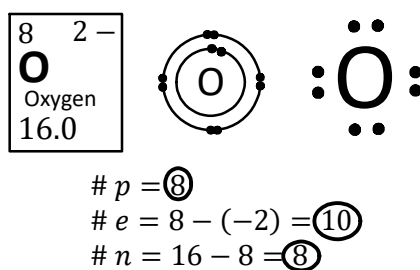
Physical change : Melting, boiling, freezing, dissolving, evaporation, condensing, crushing, breaking, cutting, bending, stretching.

Chemical change : Corrosion, rusting, rotting, burning, cooking, combustion, chemical decomposition.

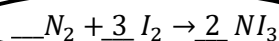
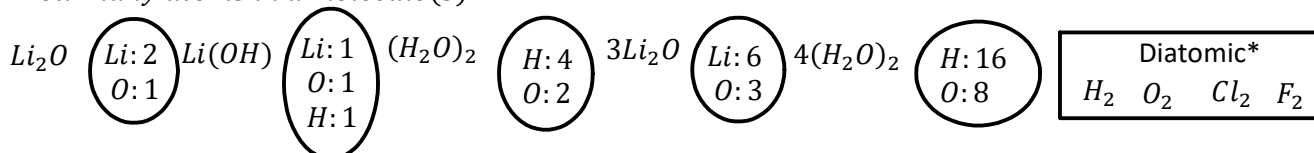
Oxygen Atom : O



Oxygen Ion : O²⁻



How many atoms in a molecule(s)?



Balancing

Conservation of Mass : Mass can neither be created nor destroyed.

Synthesis : A + B → AB

Decomposition : AB → A + B

Single Replacement : AB + C → AC + B

Double replacement : AB + CD → AD + CB

Metals trade non-metals*

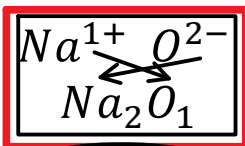
Combustion : C_xH_y + O₂ → CO₂ + H₂O

Hydrocarbon + Oxygen → Carbon Dioxide + Water

Neutralization : HA + BOH → AB + H₂O

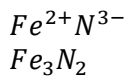
Acid + Base → Salt + Water

Ionic M/NM



Sodium Oxide

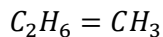
Multi-valent :



iron (II) nitride

I, II, III, IV, V, VI

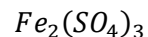
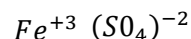
Covalent : NM/NM



dicarbon hexahydride

mono, di, tri, tetra, penta
hexa, hepta, octa, nona, deca

Polyatomic :



iron (III) sulphate

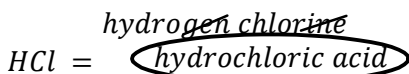


sodium chloride
heptahydrate

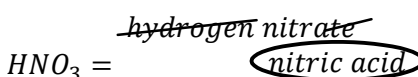
Acids: tend to have an H⁺ pH < 7

pH = 5 = 10⁻⁵ = 10⁻³ × 10⁻²

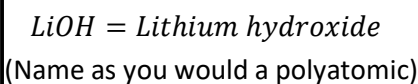
Do not contain Oxygen



Contain Oxygen



pH > 7
Bases : tend to have an OH⁻



Separation

Hand/Magnet
Filtration/Evaporation
Distillation/Gravity
Solvent Extraction
Chromatography

