

Reaction Types



Combination (Synthesis) Reactions

Two or more substances combine to form a new compound.



- ❑ Reaction of elements with oxygen and sulfur
- ❑ Reactions of metals with Halogens
- ❑ Synthesis Reactions with Oxides
- ❑ There are others not covered here!

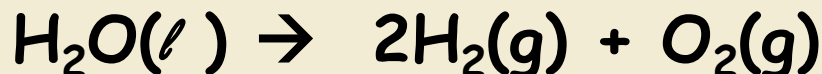
Decomposition Reactions

A single compound undergoes a reaction that produces two or more simpler substances



Decomposition of:

■ Binary compounds



■ Metal carbonates



■ Metal hydroxides



■ Metal chlorates



■ Oxyacids



Single Replacement Reactions



Replacement of:

- Metals by another metal
- Hydrogen in water by a metal
- Hydrogen in an acid by a metal
- Halogens by more active halogens

The Activity Series of the Metals

- Lithium
- Potassium
- Calcium
- Sodium
- Magnesium
- Aluminum
- Zinc
- Chromium
- Iron
- Nickel
- Lead
- Hydrogen
- Bismuth
- Copper
- Mercury
- Silver
- Platinum
- Gold

- Metals can replace other metals provided that they are above the metal that they are trying to replace
- Metals above hydrogen can replace hydrogen in acids.
- Metals from sodium upward can replace hydrogen in water

The Activity Series of the Halogens

- Fluorine
- Chlorine
- Bromine
- Iodine

Halogens can replace other halogens in compounds, provided that they are above the halogen that they are trying to replace.



Double Replacement Reactions

The ions of two compounds exchange places in an aqueous solution to form two new compounds.



One of the compounds formed is usually a precipitate, an insoluble gas that bubbles out of solution, or a molecular compound, usually water.

Combustion Reactions

A substance combines with oxygen, releasing a large amount of energy in the form of light and heat.

- Reactive elements combine with oxygen



(This is also a synthesis reaction)

- The burning of natural gas, wood, gasoline

