

Yields = arrow facing right

reactants are on the left and products are on the right in a chemical equation  
skeleton equation

catalyst

### Table 8.1

p 206. 1 and 2

### balancing chemical equations

- a) you may not change the formula of a substance to balance an equation
- b) you can only change coefficients to balance an equation
- c) atoms must be conserved (same type and number of atoms on both sides of the equation)

atoms are conserved = mass and matter are conserved = law of conservation of mass

pp. 209-211 problems 3-12

### types of chemical reactions

- a) combination (synthesis)
- b) decomposition
- c) single-replacement (single displacement)
- d) double-replacement (double displacement)
- e) combustion

Single replacement reaction, activity series, Table 8.2

double replacement reactions are driven by

- 1) formation of a solid called a precipitate
- 2) production of a gas that leaves the reaction
- 3) formation of water

complete combustion of a **hydrocarbon** produces only **CO<sub>2</sub>** and **H<sub>2</sub>O**

pp. 214-224 problems 13-22, 24

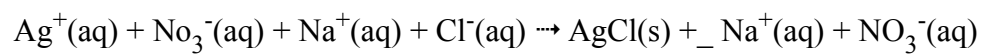
**molecular equation** ionic reactants and products are written as if they are molecular

**ionic equation** soluble ionic substances are written in ion form

**net ionic equation** spectator ions are removed

molecular equation:  $\text{AgNO}_3 (\text{aq}) + \text{NaCl} (\text{aq}) \rightarrow \text{AgCl} (\text{s}) + \text{NaNO}_3 (\text{aq})$

ionic equation:



net ionic equation:  $\text{Ag}^+(\text{aq}) + \text{Cl}^-(\text{aq}) \rightarrow \text{AgCl}(\text{s})$

**soluble, insoluble (low solubility), precipitate (ppt)**

pp. 226-228 problems 25-31

pp. 232-234 problems 36, 38, 42, 46, 47b-e, 49, 54, 59, 63a,c 64  
(cum rev 66 and 67)