

Chemical reactions

chapter 5

Hydrogen plus oxygen gives water



reactants

→

products

Equations must be balanced

Chemical Equations

Count number of atoms on each side



H_2 means $\text{H} + \text{H}$ or two H atoms

O_2 means $\text{O} + \text{O}$ or two O atoms

Chemical Equations

Balance equations by adding coefficients

Small, whole numbers before a formula



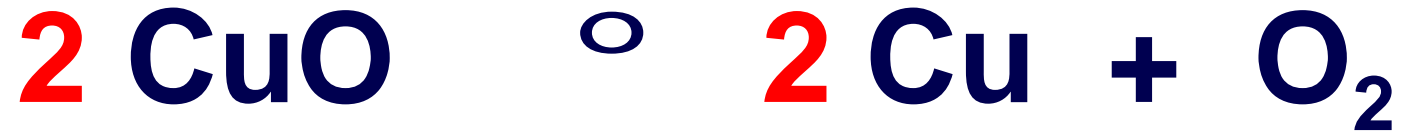
Chemical Equations

Chemical equations obey the law of conservation of mass

Balancing Equations



Balancing Equations



Balancing Equations



Balancing Equations



Balancing Equations



Balancing Equations



Balancing Equations



Balancing Equations



Equations from Names

aluminum + oxygen \circ aluminum oxide



Equations from Names

aluminum + oxygen \circ aluminum oxide



Equations from Names

magnesium hydroxide °
magnesium oxide + water

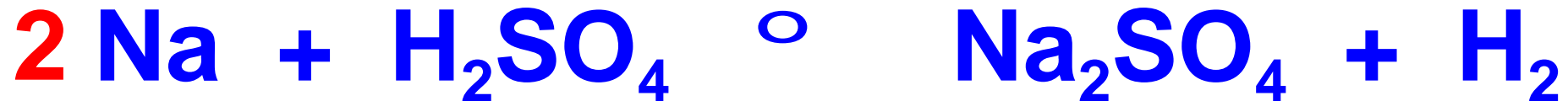


already balanced

Equations from Names

sodium + sulfuric acid °

sodium sulfate + hydrogen



Types of chemical reactions

1) combination reactions

2 or more substances combine
◦ 1 substance



Types of chemical reactions

2) decomposition reactions

one substance

◦ 2 simpler substances



Types of chemical reactions

3) replacement reactions

a. single replacement

b. double replacement

Types of chemical reactions

3) replacement reactions

a. single replacement

Types of chemical reactions

3) replacement reactions

one element replaces

a. single replacement another in a compound



Zn replaces the H

Types of chemical reactions

3) replacement reactions

one element replaces

a. single replacement another in a compound



Zn replaces the H

Types of chemical reactions

3) replacement reactions

atoms exchange between
two compounds

b. double replacement



Types of chemical reactions

3) replacement reactions

atoms exchange between
two compounds

b. double replacement



Types of chemical reactions

3) replacement reactions *atoms exchange between two compounds*

b. double replacement

