

Chapter 6 - Chemical Reactions

Section 1 - The Nature of Chemical Reactions

[http://learn.sdstate.edu/deb_pravecek/chem106/
chemical_reactions.htm](http://learn.sdstate.edu/deb_pravecek/chem106/chemical_reactions.htm)

Chemical reactions change substances!



There are many signs that a chemical reaction took place



Production of gas

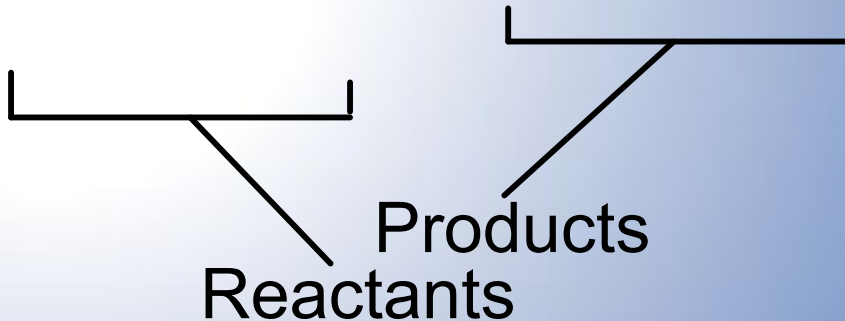
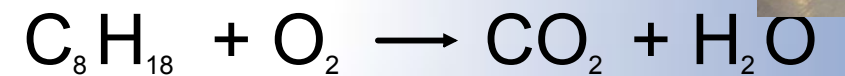
Color change

Odor

Light emitted



Chemical reactions rearrange atoms

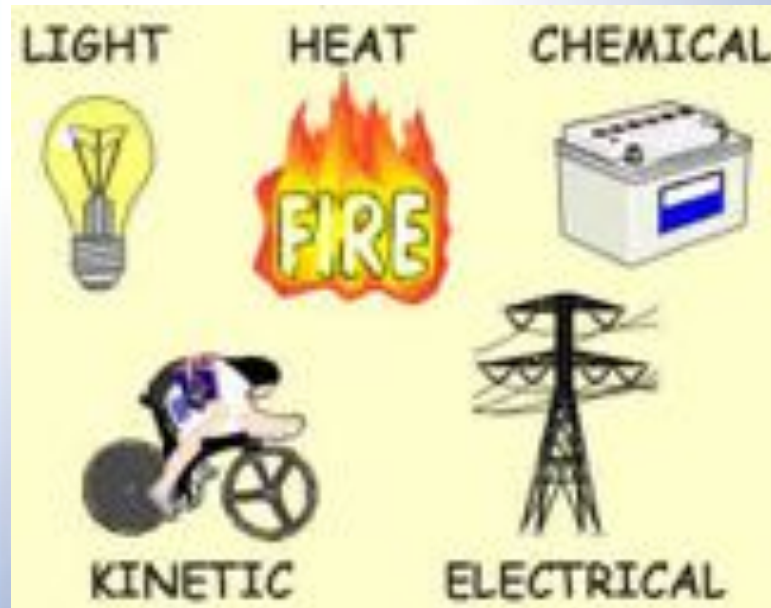


Gas is always exposed to oxygen...why doesn't it combust?

In order to break chemical bonds energy must be added

Forming chemical bonds releases energy

There are many forms of energy



Electricity

Sound

Light

Heat

Motion (Kinetic)

Chemical

Exothermic reactions release energy

Examples?



Endothermic reactions absorb energy

Examples?



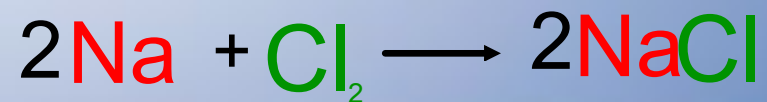
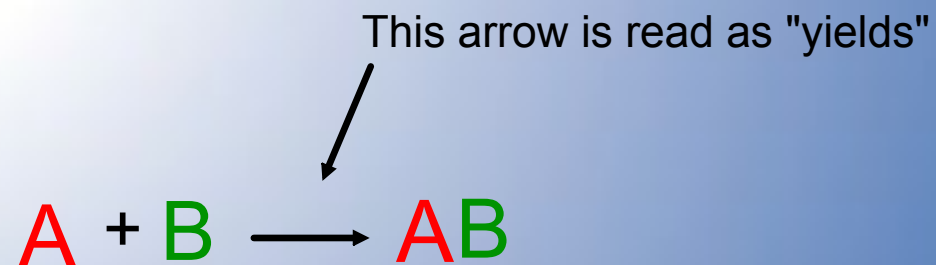
Homework:

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Section 2 - Reaction Types

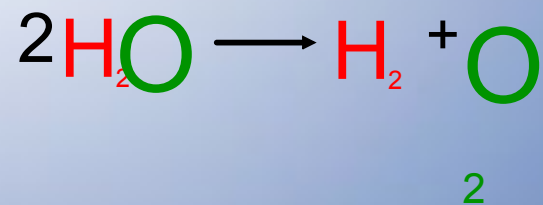
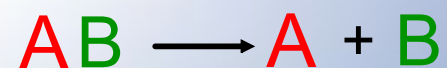
Synthesis Reaction

A reaction in which two or more substances combine to form a new compound



Decomposition Reaction

A reaction in which a single compound breaks down to form two or more simpler substances



The decomposition of water, by running an electrical current through it is called electrolysis

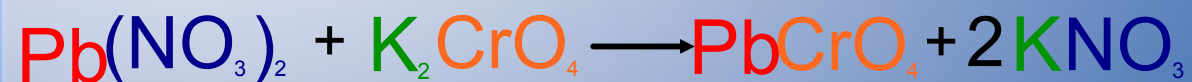
Single-Displacement Reaction

A reaction in which one element takes the place of another element in a compound



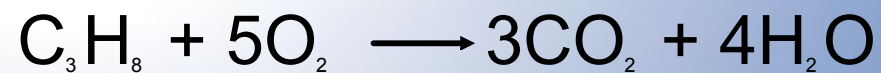
Double-Displacement Reaction

A reaction in which one element takes the place of another element in a compound



Combustion Reaction

The reaction of a carbon-based compound with oxygen, producing carbon dioxide and water vapor



Oxidation-reduction reactions occur when any chemical change causes an element to be gain or lose electrons

Reduction is the GAIN of electrons

Oxidation is the LOSS of electrons

LEO says GER

or

OIL RIG

Oxidation is sometimes referred to as rust

Metal iron reacts with oxygen to form rust

