

Combustion

A chemical reaction is the process in which a set of substances are changed at the molecular level in order to become a different substance (the product). There are different kinds of chemical reactions. A combustion reaction is when oxygen joins with another compound to form water and carbon dioxide. A combustion reaction is an exothermic reaction, meaning that it produces energy in the form of heat. A combustion reaction also often produces light or flame. Combustion reactions are very common in everyday life. In fact, combustion reactions are more commonly known as burning.

Combustion was the first chemical change discovered by man. The ability to use and control fire helped early humans to survive and revolutionized the way that they lived. Today we use combustion to generate power (by burning coal), to power engines (in cars, airplanes, and rockets), and to heat our homes (furnaces).

Before a combustion reaction can occur, the energy needed to initiate the combustion must be overcome. Very often a combustion reaction is started by applying a flame or a spark to a substance. The flame or the spark provides the heat needed to initiate the reaction. Once the reaction has begun, it will continue until all available fuel or oxygen is used up.

A substance that is able to combust (burn) is called a combustible. Most combustibles are biological in origin, which means they are made up at least partially of carbon, hydrogen, and oxygen. Wood is an example of a biological combustible. Other common combustibles are petroleum fuels like gasoline, diesel, and jet fuel. These fuels contain a complex combination of molecules like hydrogen and carbon which produce energy when burned. Some non-biological substances, such as magnesium, can also undergo combustion.

