

Chemistry: Study of Matter and Change

Chemical Properties: Chemical Reactions

Chemical Reactions: Chemical Equations

Chemical reactions are processes in which one or more substances are converted into one or more new substances. The substances that enter a chemical reaction are called reactants, and the substances that are produced are called products. A chemical equation is a symbolic representation of a chemical reaction, showing the reactants on the left and the products on the right, separated by an arrow.

Chemical reactions are classified into several types:

1. Synthesis: Two or more substances combine to form a single product.

2. Decomposition: A single substance breaks down into two or more products.

3. Single Displacement: One element replaces another element in a compound.

4. Double Displacement: Two compounds exchange ions or molecules to form two new compounds.

5. Combustion: A substance reacts with oxygen to produce heat and light.

Chemical reactions are governed by the law of conservation of mass, which states that matter is neither created nor destroyed in a chemical reaction.

6. Redox: A reaction in which the oxidation state of a substance changes.

Chemical reactions are also classified based on the energy changes that occur during the reaction. Exothermic reactions release energy, while endothermic reactions absorb energy.

Chemical reactions are studied in the field of chemistry, which is the study of matter and its properties.

Chemical reactions are also studied in the field of biochemistry, which is the study of chemical processes in living organisms.