

1. chemical reactions always involve changes in the chemical bonds that join atoms in compounds.

chemical reaction

Reactants

products

2. Chemical reactions that release energy often occur spontaneously. Chemical reactions that absorb energy will not occur without a source of energy.

activation energy

3. Enzymes speed up chemical reactions that take place in cells.

Catalyst

Enzymes

Substrates

1. Some chemical reaction reacts slow, and some reacts fast.

a process that changes, or transforms one set of chemicals into another.

element or compound that enter into a chemical reaction.

the element or compound produced by a chemical reaction.

2. a reaction needs or produces energy, while the reverse reaction is different.

Every organism needs energy to start a chemical reaction. Energy that is needed to get a reaction started.

Enzymes need energy to react.

enzymes produced by

human works best at 37°C .

a substance that speeds up the rate of a chemical reaction.

proteins that act as biological catalysts.

the reactants of enzyme-catalyzed reactions.