Enthalpy

A thermodynamic quantity equivalent to the total heat content of a system is called enthalpy. Denoted by 'H'.

Enthalpy change(ΔH)

1. Exothermic and
2. Endothermic reactions

Most chemical reactions are accompanied by energy changes. Some absorbs energy while some releases it.

Exothermic reaction:

An **exothermic** *reaction* is a reaction that **releases energy** to the surroundings. Therefore the product contain **less** energy with respect to the reactants. The energy is released as heat energy, so the surroundings **warm.**

Examples see in board

Endothermic reaction:

An **endothermic** *reaction* is a reaction that **absorbs energy** from the surroundings. Therefore the products contain **more** energy with respect to the reactants. The energy is absorbed as heat energy, so the surroundings **cool down.**

Examples see in board

An energy level diagram shows the relative energies of the products and reactants. The higher its energy, the higher its position.

Standard enthalpy changes:

The standard condition

To make comparison of enthalpy changes a fair comparison, same conditions

must be used. These are called the *standard conditions:*

- A pressure of ***100 kPa*** (approximately atmospheric pressure).
- A temperature of ***298 K or 25 °C***.
- Every substance involved must be in its **normal physical state** at 100 kPa and 298 K. For example, water is in liquid, not ice or steam.