**Heat Enthalpy**

Chemical systems have several kinetic energies:

* Moving electrons
* Vibrations of atoms in molecules
* Rotation and translation of molecules

They also have potential energies:

* Nuclear potential energy of protons and neutrons in nuclei
* Electronic potential energy of atoms connected by chemical bonds

These energies are unable to be measured.

Instead the enthalpy change is measured.

Enthalpy change, ΔH, is the difference in the enthalpies of the reactants and the products.

The enthalpy change is measured by measuring the energy absorbed from or released to the surroundings when a system changes from reactants to products.

 ΔH system = Q surroundings

Types of Enthalpy Changes (page 304)