

Internal Energy of a System

Transferring Heat and Doing Work

- C A system undergoing chemical or physical change can change its internal energy by transferring **heat** (q), doing

Heat Change and Enthalpy

C As a chemical or physical change occurs, potential energy changes by gaining or losing heat, resulting in a temperature change.

D This change in heat content is sometimes called the **heat of reaction**.

C We will often be interested in the *heat content under constant pressure conditions*, called the **enthalpy**, H , of the system.

D H cannot be measured directly, but we can calculate ΔH of reaction.

Enthalpy and Internal Energy

ΔH and State

Standard conditions ($T = 25^\circ\text{C}$, $P = 1 \text{ atm}$)



