MIDTERM Review 2017

Chapter 17 - Thermochemistry

17.1 – The flow of Energy – Heat and Flow

* Chemical potential energy
  + System
  + Surroundings
  + Law of conservation of energy
  + Endothermic processes
  + Exothermic processes
  + Heat capacity
  + Specific heat –
    - units used

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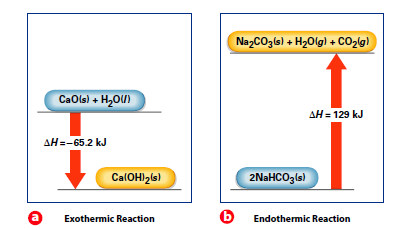
17.2 Measuring and expressing Enthalpy Change

* Calorimetry
* Calorimeter
* Enthalpy (H)
* Q = ΔH
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* Thermochemical Equations

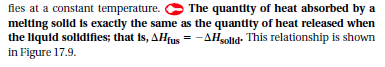
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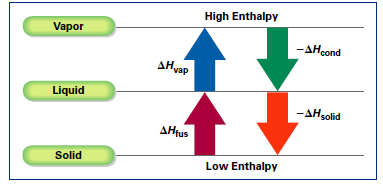
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* Heat of reaction ΔH
* Heat of combustion ΔH
* Enthalpy diagrams



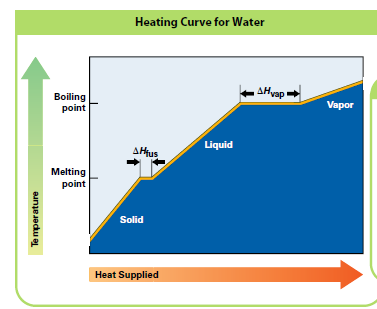
17.3 Heat in Changes of State

* Heats of fusion and solidification
  + Molar heat of fusion
  + Molar heat of solidification
  + 



* Heats of vaporization and condensation
  + Molar heat of vaporization
  + Molar heat of condensation

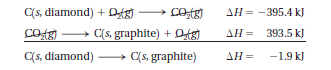
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* Heat of Solution
  + During the formation of a solution, heat is either released or absorbed
  + Molar heat of solution ΔHsoln

17.4 Calculating Heats of Reaction

* Hess’s Law of heat summation



* Standard Heats of Formation

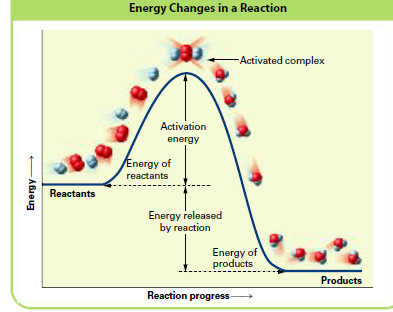
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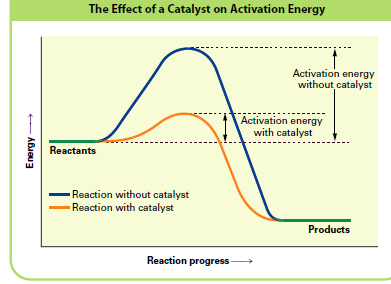
Chapter 18 – Reaction Rates and Equilibrium

18.1 – Rates of Reaction

* Collision theory
* Activation energy
* Activated complex

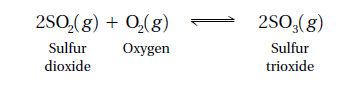


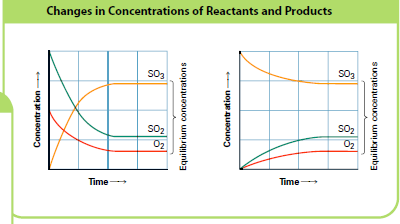
* Transition state
* Inhibitor
* FOUR factors that affect rate of reaction
  + Temperature
  + Concentration
  + Particle size (surface area)
  + Catalyst



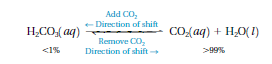
18.2 Reversible reactions & Equilibrium

* Reversible reactions





* Chemical equilibrium
* Equilibrium position
* Le Chatelier’s principle
  + Concentration



* + Temperature

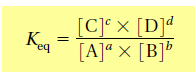
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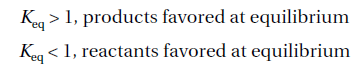
* + Pressure

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* Equilibrium constant – Keq

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18.3 Solubility Equilibrium

* Solubility product constant Ksp
* The smaller the numerical value of the solubility product constant, the lower the solubility of the compound
* Common ion
* Common ion effect