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



17.2 Measuring and expressing Enthalpy Change

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

or



* 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





* 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



* + Pressure



* Equilibrium constant – Keq







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