

Chemistry Chapter 16 Vocabulary

Calorie: The amount of heat required to raise the temperature of one gram of pure water by one degree Celsius

Calorimeter: An insulated device that is used to measure the amount of heat released or absorbed during a physical or chemical process

Chemical Potential Energy: The energy stored in a substance because of its composition; is released or absorbed as heat during chemical reactions or processes

Energy: The capacity to do work or produce heat; exists as potential energy, which is stored in an object due to its composition or position, and kinetic energy, which is the energy of motion

Enthalpy: The heat content of a system at constant pressure

Enthalpy (Heat) of Combustion: The enthalpy change for the complete burning of one mole of a given substance

Enthalpy (Heat) of Reaction: The change in enthalpy for a reaction-the difference between the enthalpy of the substances that exist at the end of the reaction and the enthalpy of the substances present at the start

Entropy: A measure of the disorder or randomness of the particle of a system

Free Energy: The energy that is available to do work-the difference between the change in enthalpy and the product of the entropy change and the absolute temperature

Heat: A form of energy that flows from a warmer object to a cooler object

Hess's Law: States that if two or more thermochemical equations can be added to produce a final equation for a reaction, then the sum of the enthalpy changes for the individual reactions is the enthalpy change for the final reaction

Joule: The SI unit of heat and energy

Law of Conservation of Energy: States that at a given temperature, a chemical system may reach a state in which a particular ratio of reactant and product concentrations has a constant value

Law of Disorder: States that entropy of the universe must increase as a result of a spontaneous reaction or process

Molar Enthalpy (Heat) of Fusion: The amount of heat required to melt one mole of a solid substance

Molar Enthalpy (Heat) of Vaporization: The amount of heat required to evaporate one mole of a liquid

Specific Heat: The amount of heat required to raise the temperature of one gram of a given substance by one degree Celsius

Spontaneous Process: A physical or chemical change that occurs without outside intervention and may require energy to be supplied to begin the process

Standard Enthalpy (Heat) of Formation: The change in enthalpy that accompanies the formation of one mole of a compound in its standard state from its constituent elements in the standard states

Surroundings: In thermochemistry, includes everything in the universe except the system

System: In thermochemistry, the specific part of the universe containing the reaction or process being studied

Thermochemical Equation: A balanced chemical equation that includes the physical states of all the reactants and products and specifies the change in enthalpy

Thermochemistry: The study of heat changes that accompany chemical reactions and phase changes

Universe: In thermochemistry, is the system plus the surroundings