

**Calorie** a unit of measurement for energy; one calorie is the quantity of energy required to heat one gram of water by one Celsius degree

**Calorimetry** the science of measuring heat flow

**Carbohydrate** a polyhydroxyl ketone or polyhydroxyl aldehyde or a polymer composed of these.

**Carbon steel** an alloy of iron containing up to about 1.5% carbon

**Carboxyl group** the  $\text{-COOH}$  group in an organic acid

**Carboxylic acid** an organic compound containing the carboxyl group

**Catalyst** a substance that speeds up a reaction without being consumed

**Cathode** in a galvanic cell, the electrode at which reduction occurs

**Cathode rays** the "rays" emanating from the negative electrode (cathode) in a partially evacuated tube; a stream of electrons

**Cathodic protection** the connection of an active metal, such as magnesium, to steel to protect the steel from corrosion

**Cation** a positive ion

**Cell potential (electromotive force)** the driving force in a galvanic cell that pushes electrons from the reducing agent in one compartment to the oxidizing agent in the other

**Chain reaction (nuclear)** a self-sustaining fission process caused by the production of neutrons that proceed to split other nuclei

**Charles's law** the volume of a given sample of gas at constant pressure is directly proportional to the temperature in kelvins

**Chemical change** the change of substances into other substances through a reorganization of the atoms; a chemical reaction

**Chemical equation** a representation of a chemical reaction showing the relative numbers of reactant and product molecules

**Chemical equilibrium** a dynamic reaction system in which the concentration of all reactants and products remain constant as a function of time

**Chemical formula** a representation of a molecule in which the symbols for the

elements are used to indicate the types of atoms present and subscripts are used to show the relative number of atoms

**Chemical kinetics** the area of chemistry that concerns reaction rates

**Chemical stoichiometry** the quantities of materials consumed and produced in a chemical reaction

**Colligative property** a solution property that depends on the number of solute particles present

**Collision model** a model based on the idea that molecules must collide to react; used to account for the observed characteristics of reaction rates

**Combustion reaction** the vigorous and exothermic oxidation – reduction reaction that takes place between certain substance (particularly organic compounds) and oxygen

**Complete ionic equation** an equation that shows as ions all substances that are strong electrolytes

**Compound** a substance with constant composition that can be broken down into elements by chemical processes

**Condensation** the process by which vapor molecules reform a liquid

**Condensed states of matter** liquids and solids

**Conjugate acid – base pair** two species related to each other by the donating and accepting of a single proton

**Conjugate base** what remains of an acid molecule after a proton is lost

**Continuous spectrum** a spectrum that exhibits all the wavelengths of visible light

**Control rods** in a nuclear reactor, rods composed of substances that absorb neutrons. These rods regulate the power level of the reactor

**Core (kernel) electron** an inner electron in an atom; one that is not in the outermost (valence) principle quantum level

**Corrosion** the process by which metals are oxidized in the atmosphere

**Covalent bonding** a type of bonding in which atoms share electrons

**Critical mass** the mass of fissionable material required to produce a self-sustaining chain reaction

**Critical reaction (nuclear)** a reaction in which exactly one neutron from each fission event causes another fission event, thus sustaining the chain reaction

**Crystalline solid** a solid that characterized by the regular arrangement of its components