**Salt** an ionic compound

**Salt bridge** a U-tube containing an electrolyte that connects the two

compartments of a galvanic cell, allowing ion flow without extensive mixing of the different solutions

**Saturated solution** a solution that contains as much solute as can be dissolved

in that solution

**Scientific method** a process of studying natural phenomena that involves

making observations, forming laws and theories, and testing theories by experimentation

**Scientific notation** see *Exponential notation*

**Scintillation counter** an instrument that measures radioactive decay by sensing

the flashes of light that the radiation produces in a detector

**Secondary structure (of a protein)** the three – dimensional structure of the

protein chain (for example, -helix, random coil, or pleated sheet)

**SI units** International System of units based on the metric system and on units

derived from the metric system

**Sigma () bond** a covalent bond in which the electron pair is shared in an area

centered on a line running between the atoms

**Significant figures**  the certain digits and the first uncertain digit of a

measurement

**Silica** the fundamental silicon – oxygen compound, which has the empirical

formula SiO2 and forms the basis of quartz and certain types of sand

**Silicates** salts that contain metal cations and polyatomic silicon – oxygen anions

that are usually polymeric

**Single bond** a bond in which two atoms share one pair of electrons

**Solid** one of the three states of matter; has a fixed shape and volume

**Solubility** the amount of a substance that dissolves in a given volume of solvent

or solution at a given temperature

**Solubility product** the constant for the equilibrium expression representing the

dissolving of an ionic solid in water

**Solute** a substance dissolved in a solvent to form a solution

**Solution** a homogeneous mixture

**Solvent** the dissolving medium in a solution

**Somatic damage** radioactive damage to an organism resulting in its sickness or

death

**Specific heat** another name for specific heat capacity

**Specific heat capacity** the amount of energy required to raise the temperature

of one gram of a substance by one Celsius degree

**Spectator ions** ions present in solution that do not participate directly in a

reaction

**Standard atmosphere** a unit of measurement for pressure equal to 760 mm Hg

or 101,325 Pa

**Standard solution** a solution the concentration of which is accurately known

**Standard temperature and pressure (STP)** the condition 0 oC and 1

atmosphere of pressure

**State function** a property that is independent of the pathway

**States of matter** the three different forms in which matter can exist; solid, liquid,

and gas

**Stoichiometric quantities** quantities of reactants mixed in exactly the amounts

that result in their being used up at the same time

**Stoichiometry of a reaction** the relative quantities of reactants and products

involved in the reaction

**Strong acid** an acid that completely dissociates (ionizes) to produce H+ ion and

the conjugate base

**Strong base** a metal hydroxide compound that completely dissociates into its

ions in water

**Strong electrolyte** a material that, when dissolved in water, dissociates

(ionizes) completely and gives a solution that conducts an electric current very efficiently

**Structural formula** the representation of a molecule in which the relative

positions of the atoms are shown and the bonds are indicated by lines

**Subcritical reaction (nuclear)** a reaction in which fewer than one of the

neutrons from each fission event causes another fission event and the process dies out

**Sublimation** the process by which a substance goes directly from the solid state

to the gaseous state without passing through the liquid state

**Supercooling** the process of cooling a liquid to a temperature below its freezing

point without its changing to a solid

**Supercritical reaction (nuclear)** a reaction in which more than one of the

neutrons from each fission event causes another fission event. The process rapidly escalates to a violent explosion

**Superheating** the process of heating a liquid to a temperature above its boiling

point without its boiling

**Surroundings** everything in the universe surrounding a thermodynamic system

**System (thermodynamic)** the part of the universe on which attention is to be

focused

**Systematic error** an error that always occurs in the same direction