

**Partial pressures** the independent pressures exerted by different gases in a mixture

**Particle accelerator** a device used to accelerate nuclear particles to very high speeds

**Pascal** the SI unit of measurement for pressure, equal to one Newton per square meter

**Percent yield** the actual yield of a product as a percentage of the theoretical yield

**Periodic table** a chart showing all the elements arranged in columns in such a way that all the elements in a given column exhibit similar chemical properties

**Petroleum** a thick, dark liquid composed mostly of hydrocarbon compounds

**pH scale** a log scale based on 10 and equal to  $-\log[\text{H}^+]$ ; a convenient way to represent solution acidity

**Phenyl group** the benzene molecule minus one hydrogen atom

**Photochemical smog** air pollution produced by the action of light on oxygen, nitrogen oxides, and unburned fuel from auto exhaust to form ozone and other pollutants

**Photon** a “particle” of electromagnetic radiation

**Physical change** a change in the form of a substance that can change without the substance becoming a different substance

**Physical property** a characteristic of a substance that can change without the substance becoming a different substance

**Polar covalent bond** a covalent bond in which the electrons are not shared equally because one atom attracts them more strongly than the other

**Polar molecule** a molecule that has a permanent dipole moment

**Polyatomic ion** an ion containing a number of atoms

**Polyelectronic atom** an atom with more than one electron

**Polymer** a large, usually chain – like molecule built from many small molecules (monomers)

**Polymerization** a process in which many small molecules (monomers) are joined together to form a large molecule

**Polyprotic acid** an acid with more than one acidic proton. It dissociates in a stepwise manner, one proton at a time

**Positron production** a mode of nuclear decay in which a particle is formed that has the same mass as an electron but opposite charge. The net effect is to change a proton to a neutron

**Potential energy** energy due to position or composition

**Precipitate reaction** a reaction in which an insoluble substance forms and separates from the solution as a solid

**Precision** the degree of agreement among several measurements of the same quantity; the reproducibility of a measurement

**Primary structure (of a protein)** the order (sequence) of amino acids in the protein chain

**Probability distribution (orbital)** a representation indicating the probabilities of finding an electron at various points in space

**Product** a substance resulting from a chemical reaction. It is shown to the right of the arrow in a chemical equation

**Protein** a natural polymer formed by condensation reactions between amino acids

**Proton** a positively charged particle in an atomic nucleus

**Pure substance** a substance with constant composition