

Acid a substance that produces hydrogen ions in aqueous solution; a proton donor

Acid-base indicator a substance that marks the end point of an acid-base titration by changing color

Acid rain rainwater with an acidic pH; a result of air pollution by sulfur dioxide and nitrogen oxides

Actinide series a group of fourteen elements following actinium on the periodic table; in which the 5f orbitals are being filled

Activation energy the threshold energy that must be overcome to produce a chemical reaction

Air pollution contamination of the atmosphere, mainly by the gaseous products of transportation and the production of electricity

Alcohol an organic compound in which the hydroxyl group is a substituent on a hydrocarbon

Aldehyde an organic compound containing the carbonyl group bonded to at least one hydrogen atom

Alkali metal a Group 1 metal

Alkaline earth metal a Group 2 metal

Alkane a saturated hydrocarbon with the general formula C_nH_{2n+2}

Alkene an unsaturated hydrocarbon containing a carbon-carbon double bond. The general formula is C_nH_{2n}

Alkyne an unsaturated hydrocarbon containing a carbon-carbon triple bond. The general formula is C_nH_{2n-2}

Alloy a substance that contains a mixture of elements and has metallic properties.

Alloy steel a form of steel containing carbon plus metals such as chromium, cobalt, manganese, and molybdenum.

Alpha (α) particle a helium nucleus produced in radioactive decay

Alpha-particle production a common mode of decay for radioactive nuclides in which the mass number changes

Amine a organic base derived from ammonia in which one or more of the hydrogen atoms are replaced by organic groups

α -Amino acid an organic acid in which an amino group, a hydrogen atom, and an R group are attached to the carbon atom next to the carboxyl group

Ampere the unit of measurement for electric current; 1 ampere is equal to 1 coulomb of charge per second

Amphoteric substance a substance that can behave either as an acid or as a base

Anion a negative ion

Anode in a galvanic cell, the electrode at which oxidation occurs

Aromatic hydrocarbon one of a special class of cyclic unsaturated hydrocarbons, the simplest of which is benzene

Arrhenius concept a concept postulating that acids produce hydrogen ions in aqueous solution, whereas bases produce hydroxide ions

Atmosphere the mixture of gases that surrounds the earth's surface

Atom the fundamental unit of which elements are composed

Atomic mass (weight) the weighted average mass of the atoms in a naturally occurring element

Atomic number the number of protons in the nucleus of an atom; each element has a unique atomic number

Atomic radius half the distance between the atomic nuclei in a molecule consisting of identical atoms

Atomic solid a solid that contains atoms at the lattice points

Aufbau principle a principle stating that as protons are added one by one to the nucleus to build up the elements, electrons are similarly added to the hydrogen-like orbitals

Auto-ionization the transfer of a proton from one molecule to another of the same substance

Avogadro's law equal volumes of gases at the same temperature and pressure

contain the same number of particles (atoms or molecules)

Avogadro's number the number of atoms in exactly 12 grams of pure ^{12}C ,
equal to 6.022×10^{23}