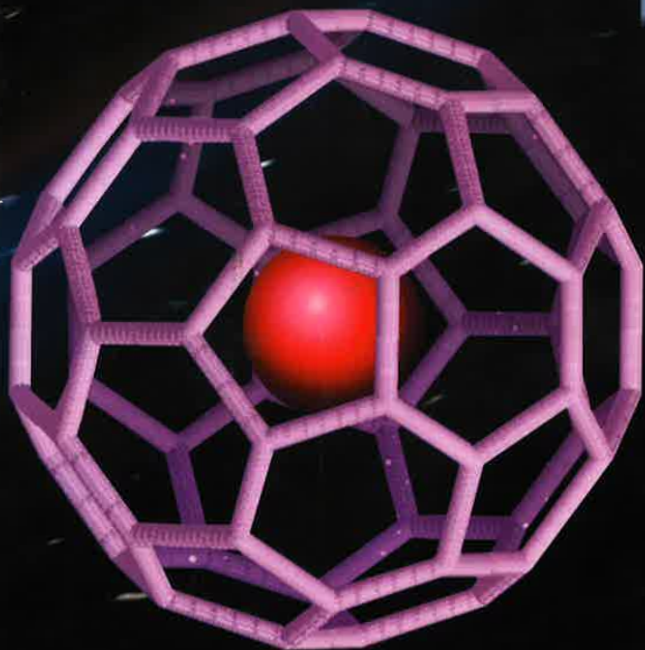


McGraw-Hill
Dictionary ^{of}
SCIENTIFIC
and
TECHNICAL
TERMS



Sixth Edition

On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force *Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
Sixth Edition**

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adrenergic [PHYSIO] Describing the chemical activity of epinephrine or epinephrine-like substances. {ad-rə'nə-rjĭk}

adrenergic blocking agent [BIOCHEM] Any substance that blocks the action of epinephrine or an epinephrine-like substance. {ad-rə'nə-rjĭk 'blak-ŋ, ā-jənt}

adrenochrome [BIOCHEM] $C_9H_9O_2N$ A brick-red oxidation product of epinephrine which can convert hemoglobin into methemoglobin. {ə'drən-ə-krōm}

adrenocortical hormone See adrenal cortex hormone. {ə'drən-ə'kōrd-ə-kəl 'hōr,mōn}

adrenocorticosteroid [BIOCHEM] 1. A steroid that is obtained from the adrenal cortex. 2. A steroid that resembles adrenal cortex steroids or has physiological effects like them. {ə'drən-ə'kōrd-ə-kō'stir-ōid}

adrenocorticotrophic hormone [BIOCHEM] The chemical secretion of the adenohypophysis that stimulates the adrenal cortex. Abbreviated ACTH. Also known as adrenotropic hormone. {ə'drən-ə'kōrd-ə-kō'trōp-ik 'hōr,mōn}

adrenogenital syndrome [MED] A group of symptoms associated with hypersecretion of adrenal cortex hormones; effects vary with sex and time of development. {ə'drən-ə'jen-ə-təl 'sĭn,drōm}

adrenomedullary [PHYSIO] Pertaining to the adrenal gland medulla. {ə'drē-nō-mə'dəl-ə-rē}

adrenotropic [PHYSIO] Of or pertaining to an effect on the adrenal cortex. {ə'drən-ə'trōp-ik}

adrenotropic hormone See adrenocorticotrophic hormone. {ə'drən-ə'trōp-ik 'hōr,mōn}

adret [ECOL] The sunny (usually south) face of a mountain featuring high timber and snow lines. {ad-rēt}

ADR studio [ENG ACOUS] A sound-recording studio used in motion-picture and television production to allow an actor who did not intelligibly record his or her speech during the original filming or video recording to do so by watching himself or herself on the screen and repeating the original speech with lip synchronism; it is equipped with facilities for recreating the acoustical liveness and background sound of the environment of the original dialog. Derived from automatic dialog replacement studio. Also known as postsynchronizing studio. {ā'dē'r stū-dē-ō}

ADSEL See Mode S.

ADSL See asymmetric digital subscriber line; asynchronous digital subscriber loop. {ā-dē-es-el or 'ad-səl}

adsorbate [CHEM] A solid, liquid, or gas which is adsorbed as molecules, atoms, or ions by such substances as charcoal, silica, metals, water, and mercury. {ad'sōr,bāt}

adsorbent [CHEM] A solid or liquid that adsorbs other substances; for example, charcoal, silica, metals, water, and mercury. {ad'sōr-bənt}

adsorption [CHEM] The surface retention of solid, liquid, or gas molecules, atoms, or ions by a solid or liquid, as opposed to absorption, the penetration of substances into the bulk of the solid or liquid. {ad'sōrp-shən}

adsorption catalysis [PHYS CHEM] A catalytic reaction in which the catalyst is an adsorbent. {ad'sōrp-shən kə'tal-ə-səs}

adsorption chromatography [ANALY CHEM] Separation of a chemical mixture (gas or liquid) by passing it over an adsorbent bed which adsorbs different compounds at different rates. {ad'sōrp-shən ,krō-mə'tāg-rə-fē}

adsorption complex [CHEM] An entity consisting of an adsorbate and that portion of the adsorbent to which it is bound. {ad'sōrp-shən ,kām,pleks}

adsorption gasoline [MATER] Gasoline extracted from natural gas or refinery gas. {ad'sōrp-shən ,gas-ō'lēn}

adsorption indicator [ANALY CHEM] An indicator used in solutions to detect slight excess of a substance or ion; precipitate becomes colored when the indicator is adsorbed. An example is fluorescein. {ad'sōrp-shən ,in-də,kād-ər}

adsorption isobar [PHYS CHEM] A graph showing how adsorption varies with some parameter, such as temperature, while holding pressure constant. {ad'sōrp-shən 'ī-sō,bār}

adsorption isotherm [PHYS CHEM] The relationship between the gas pressure p and the amount w , in grams, of a gas or vapor taken up per gram of solid at a constant temperature. {ad'sōrp-shən 'ī-sō,thərm}

adsorption potential [PHYS CHEM] A change in the chemical potential that occurs as an ion moves from a gas or solution

phase to the surface of an adsorbent. {ad'sōrp-shən pə'ten-chəl}

adsorption system [MECH ENG] A device that dehumidifies air by bringing it into contact with a solid adsorbing substance. {ad'sōrp-shən ,sĭs-təm}

ADT See abstract data type.

adularescence [OPTICS] A certain type of white or bluish light seen in a gemstone (usually adularia) as it is turned. {ā-jə-lə're-səns}

adularia [MINERAL] A weakly triclinic form of the mineral orthoclase occurring in transparent, colorless to milky-white pseudo-orthorhombic crystals. {ā-jə-lə-rē-ə}

adularization [GEOL] Replacement by or introduction of the mineral adularia. {ə,jū-l-ə-rə-zā-shən}

adult polycystic kidney disease [MED] An autosomal dominant disease that is characterized by the formation of cysts along the length of the nephron that causes the kidneys to enlarge, resulting in kidney failure in midadulthood. {əd'əlt ,pī-l-ə-sis'tĭk 'kīd-nē diz,ēz}

adult rickets See osteomalacia. {əd'əlt'rĭk-əts}

ad valorem tax [PETRO ENG] Property tax for oil-producing properties, assessed at a flat rate for each net barrel of oil produced. {ad və'lōr-əm 'taks}

advance [CIV ENG] In railway engineering, a length of track that extends beyond the signal that controls it. [GEOL] 1. A continuing movement of a shoreline toward the sea. 2. A net movement over a specified period of time of a shoreline toward the sea. [HYD] The forward movement of a glacier. [MECH ENG] To effect the earlier occurrence of an event, for example, spark advance or injection advance. [NAV] 1. In making a turn, the distance a vessel moves in its initial direction from the point where the rudder is started over until the heading has changed 90°. 2. The distance a vessel moves in the initial direction for heading changes of less than 90°. {əd'vans}

advanced [EVOL] Denoting a later stage within a lineage that demonstrates evolutionary progression. {əd'vans}

advanced battery [ELEC] A large battery storage system designed to harness solar or wind energy or to store excess electricity during low-demand periods for use during higher-demand periods. {əd'vans't 'bād-ə-rē}

advanced-design array radar [ORD] A radar system that uses two antennas and a data-processing center to locate and identify enemy intercontinental ballistic missiles. Abbreviated ADAR. {əd'vans't də'zĭn ə'rā 'rā,dār}

advanced fuel fusion [NUCLEO] All energy-producing reactions of light nuclei other than the reaction of a deuteron and a triton to produce a helium-4 nucleus and a neutron. {əd'vans't 'fyū-l 'fyū-zhən}

advanced gallery [MIN ENG] A small heading driven in advance of the main tunnel in tunnel excavation. {əd'vans't 'gal-rē}

advanced gas-cooled reactor [NUCLEO] A power-generating nuclear reactor which has steel-clad uranium dioxide fuel elements and is cooled by carbon dioxide gas. {əd'vans't 'gas 'kūld rē'ak-tər}

advanced line of position [NAV] A line of position which has been moved forward along the course line to allow for the run since the line was established; the opposite is a retired line of position. {əd'vans't lĭn əv pə'zĭsh-ən}

advanced potential [ELECTROMAG] Any electromagnetic potential arising as a solution of the classical Maxwell field equations, analogous to a retarded potential solution, but lying on the future light cone of space-time; the potential appears, at present, to have no physical interpretation. {əd'vans't pə'ten-chəl}

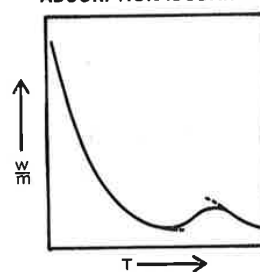
advanced programmatic risk analysis [IND ENG] A method for managing engineering programs with multiple projects and strict resource constraints which balances both technical and management risks. {əd'vans't ,prō-grā'mad-ik 'rĭsk ə,nal-ə-səs}

Advanced Research Projects Agency Network [COMPUT SCI] The computer network developed by the U.S. Department of Defense in 1969 from which the Internet originated. Abbreviated ARPANET. {əd'vans't rĭ'sərch ,prāj-eks ,ā-jən-sē ,net,wərk}

advanced sewage treatment See tertiary sewage treatment. {əd'vans't sĭ-wĭj ,trēt-mənt}

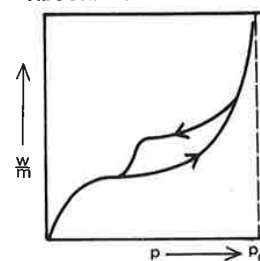
advanced signal-processing system [COMPUT SCI] A portable data-processing system for military use; its complete

ADSORPTION ISOBAR



A typical adsorption isobar; w/m is weight of material adsorbed per unit weight of adsorbent, and T is absolute temperature.

ADSORPTION ISOTHERM



A typical adsorption isotherm; w/m is weight of material adsorbed per unit weight of adsorbent, and p is pressure.