

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Sixth Edition

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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.

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without endosperm, and by being monoecious with female flowers mostly in catkins. ('bech-ə-lās-ē,ē)

betula oil See methyl salicylate. ('bech-ə-lā-oil)

betulinic acid [ORG CHEM] $C_{30}H_{48}O_3$ A dibasic acid, slightly soluble in water, ethyl alcohol, and acetone. ('bech-ə-lin-ik 'as-əd)

between decks [NAV ARCH] 1. The space beneath the main deck of a ship. 2. A deck beneath the main deck; in particular, a raised deck in a cargo ship's hold. (bə'twēn ,deks)

betwixt mountains See median mass. (bə'twɪkst ,maʊnt-ənz)

Betz cell [HISTOL] Any of the large conical cells composing the major histological feature of the precentral motor cortex in humans. ('bets ,sel)

Betz momentum theory [MECH ENG] A theory of windmill performance that considers the deceleration in the air traversing the windmill disk. ('bets mō'ment-əm ,thē-ə-rē)

beudantite [MINERAL] $PbFe_3(AsO_4)(SO_4)(OH)_8$ A black, dark green, or brown, hexagonal mineral consisting of a basic sulfate-arsenate of lead and ferric iron; occurs as rhombohedral crystals. ('byūd-ən-īt)

Beutler-Fano profile [PHYS] A function that describes a scattering cross section in the vicinity of a resonance in terms of three parameters: the resonance energy, the resonance width, and the profile index, which determines the shape of the resonance. ('bōit-lər 'fan-ō ,prō-fīl)

BeV [PHYS] A billion (10^9) electronvolts, a unit used in the United States; the international unit is GeV (gigaelectronvolts), which has the same value. (bev)

bevel [DES ENG] 1. The angle between one line or surface and another line or surface, or the horizontal, when this angle is not a right angle. 2. A sloping surface or line. [GRAPHICS] An instrument composed of two rules joined together, opening to any angle, which is used to draw angles and measure and lay off bevels. ('bev-əl)

beveled closer See king closer. ('bev-əld 'klō-zər)

bevel gear [MECH ENG] One of a pair of gears used to connect two shafts whose axes intersect. ('bev-əl ,gīr)

beveling [GEOL] Planing by erosion of the outcropping edges of strata. [MECH ENG] See chamfering. ('bev-əl-ɪŋ)

Beverage antenna See wave antenna. ('bev-rij an'ten-ə)

beyerite [MINERAL] $(Ca,Pb)Bi_2(CO_3)_2O_2$ A bright yellow to lemon yellow, tetragonal mineral consisting of bismuth and calcium carbonate; occurs as thin plates and compact earthy masses. ('bī-ə-rīt)

beyond-the-horizon communication See scatter propagation. (bə'yænd θə hə'riz-ən kə,mjū-nə'kā-shən)

Beyrichacea [PALEON] A superfamily of extinct ostracods in the suborder Beyrichicopina. (,bī-rā'kās-ē-ə)

Beyrichicopina [PALEON] A suborder of extinct ostracods in the order Paleocopa. (,bī-rā-kə,kō'pī-nə)

Beyrichiidae [PALEON] A family of extinct ostracods in the superfamily Beyrichacea. (,bī-rā'kī-ə-īdē)

bezel [DES ENG] 1. A grooved rim used to hold a transparent glass or plastic window or lens for a meter, tuning dial, or some other indicating device. 2. A sloping face on a cutting tool. [LAP] The oblique face of a cut gem, between the table and the girdle. ('bez-əl)

Bézier curve [COMPUT SCI] A curve in a drawing program that is defined mathematically, and whose shape can be altered by dragging either of its two interior determining points with a mouse. [MATH] A simple smooth curve whose shape is determined by a mathematical formula from the locations of four points, the two end points of the curve and two interior points. ('bāz-yā 'kərv)

Bezold-Abney phenomenon [PHYSIO] The perception of light at very high intensities as colorless. ('bāt,zōlt 'ab-nē fə,nām-ə,nān)

Bézout domain [MATH] An integral domain in which all finitely generated ideals are principal. (,bā,zō dō,mān)

Bézout's theorem [MATH] The theorem that the product of the degrees of two algebraic plane curves that lack a common component equals the number of their points of intersection, counted to the degree of their multiplicity, including points of intersection at infinity. ('bā,zōz ,thīr-əm)

BFL See buffered FET logic.

BFO See beat-frequency oscillator.

BFS See beam-foil spectroscopy.

B girdle [PETR] A circular pattern in petrofabric diagrams that indicates a B axis. ('bē ,gərd-əl)

BHA See butylated hydroxyanisole.

Bhabha scattering [PARTIC PHYS] Scattering of positrons by electrons. ('bā-bā 'skad-ər-ɪŋ)

BHC See 1,2,3,4,5,6-hexachlorocyclohexane.

B-H curve [ELECTROMAG] A graphical curve showing the relation between magnetic induction *B* and magnetizing force *H* for a magnetic material. Also known as magnetization curve. ('bē'āch ,kərv)

B-H meter [ENG] A device used to measure the intrinsic hysteresis loop of a sample of magnetic material. ('bē'āch ,mēd-ər)

B horizon [GEOL] The zone of accumulation in soil below the A horizon (zone of leaching). Also known as illuvial horizon; subsoil; zone of accumulation; zone of illuviation. ('bē hə'riz-ən)

bhp See boiler horsepower. See brake horsepower.

BHT See butylated hydroxytoluene.

Bi See abampere; bismuth.

biacetyl See diacetyl. ('bī-ə'sēd-əl)

Bial's test [PATH] A test for the presence of a pentose in urine, utilizing oracine, hydrochloric acid, and ferric chloride; a green color or green precipitate indicates pentose. ('byālz ,test)

biamprometry [ANALY CHEM] Amperometric titration that uses two polarizing or indicating electrodes to detect the end point of a redox reaction between the substance being titrated and the titrant. ('bī,əm-pə'rām-ə-trē)

Blanca [ASTRON] A satellite of Uranus orbiting at a mean distance of 36,760 miles (59,160 kilometers) with a period of 10 hours 27 minutes, and with a diameter of about 27 miles (44 kilometers). (bē'āŋk-ə)

Blanchi classification [RELAT] A classification of possible types of spatially homogeneous space-times. (bē'āŋ-kē ,klas-ə-fə,kā-shən)

Blanchi cosmology [ASTRON] A model of the universe which is homogeneous but not necessarily isotropic. (bē'āŋ-kē kōz'māl-ə-jē)

Blanchi identity [MATH] A differential identity satisfied by the Riemann curvature tensor; the antisymmetric first covariant derivative of the Riemann tensor vanishes identically. ('byāŋ-kē 'ī-den-əd-ē)

blanchite [MINERAL] $(Fe,Zn)SO_4 \cdot 6H_2O$ A white, monoclinic mineral consisting of iron and zinc sulfate hexahydrate; occurs in crusts of indistinct crystals. (bē'āŋ,kīt)

bias [ANALY CHEM] A systematic error occurring in a chemical measurement that is inherent in the method itself or caused by some artifact in the system, such as a temperature effect. [ELEC] 1. A direct-current voltage used on signaling or telegraph relays or electromagnets to secure desired time spacing of transitions from marking to spacing. 2. The restraint of a relay armature by spring tension to secure a desired time spacing of transitions from marking to spacing. 3. The effect on teleprinter signals produced by the electrical characteristics of the line and equipment. 4. The force applied to a relay to hold it in a given position. [ELECTR] 1. A direct-current voltage applied to a transistor control electrode to establish the desired operating point. 2. See grid bias. [MATER] In a reinforced composite material, the angle made by the reinforcing fibers with the longitudinal direction of the material. [STAT] In estimating the value of a parameter of a probability distribution, the difference between the expected value of the estimator and the true value of the parameter. [TEXT] A direction on fabric that is equivalent to the diagonal of a square of the fabric cut so that the warp and the filling are parallel to the edges. ('bī-əs)

bias-belted tire [ENG] A motor-vehicle pneumatic tire constructed with a belt of textile cord, steel, or fiber glass around the tire underneath the tread and on top of the ply cords, and laid at an acute angle to the center line of the tread. Also known as belted-bias tire. ('bī-əs ,bel-təd 'tīr)

bias cell [ELECTR] A small dry cell used singly or in series to provide the required negative bias for the grid circuit of an electron tube. Also known as grid-bias cell. ('bī-əs ,sel)

bias compensation [ENG ACOUS] The application of an outward-directed tension to the pickup arm of a record player to counteract the tendency of the arm to slide toward the center. ('bī-əs ,kām-pən,sā-shən)

BEVEL GEAR



Types of bevel gears. (Gleason Gear Works)