

Chambers Dictionary of Science and Technology

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matrix (*BioSci*) More or less continuous matter in which something is embedded, eg the non-cellulosic substances of the cell wall in which the cellulose microfibrils lie in vascular plant cell walls, the intercellular ground substance of animal connective tissues.

matrix (*Build*) The lime or cement constituting the cementing material that binds together the aggregate in a mortar or concrete.

matrix (*Eng*) The component of a composite material in which the fibres or filler materials are embedded, and which variously transfers stresses to them, prevents fibres from buckling and protects their surfaces.

matrix (*ImageTech*) A network of electronic circuits to combine several signal sources in a specified mathematical arrangement, eg to transform colour co-ordinates in a colour TV system.

matrix (*MathSci*) An array of elements, eg real or complex numbers, arranged in a square or rectangular formation:

$$\begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix}$$

matrix (*PowderTech*) The phase or phases which form the continuous skeleton of a powder body, thus forming the cells in which constituents imparting particular qualities may be held.

matrix (*Print*) The mould from which type is cast, produced from an impression with a punch; also the mould made from a relief surface in stereotyping and electrotyping. Usually contracted to *mat*.

matrixing (*ImageTech*) In colour TV, performing a colour co-ordinate transformation by computation with electrical or optical methods.

matrix metalloproteinases (*BioSci*) Proteolytic enzymes that degrade extracellular matrix. Include collagenases and elastases. Inhibitors are predicted to have benefits in arthritis and metastasis though this remains to be proven. Abbrev *MMPs*.

matroclinous (*BioSci*) Exhibiting the characteristics of the female parent more prominently than those of the male parent. Cf *PATROCLINOUS*.

matromorphic (*BioSci*) Resembling the mother.

mat (*Genrl*) Smooth but dull; tending to diffuse light; said eg of a surface painted or varnished so as to be dull or flat. Also *matte*.

matte (*ImageTech*) An opaque mask determining the image area exposed in a motion picture camera or printer. It may be a physical object in front of the camera lens or a strip of film with silhouette images of high density, used in special-effects work for image combination.

matte (*MinExt*) Fusion product consisting of mixed sulphides produced in the smelting of sulphide ores. In the smelting of copper, for instance, a slag containing the gangue oxides and a matte consisting of copper and iron sulphides are produced. The copper is subsequently obtained by blowing air through the matte, to oxidize the iron and sulphur.

matte box (*ImageTech*) An extension in front of the lens of a motion picture camera in which filters and mattes can be mounted.

matter (*Phys*) The substance of which the physical universe is composed. Matter is characterized by gravitational properties (on Earth by weight) and by its indestructibility under normal conditions.

matte shot (*ImageTech*) A special-effects shot involving the combination of images by the use of *MATTES*.

mat finish (*Build*) A surface or finish which has no sheen or gloss.

Matthiessen hypothesis (*ElecEng*) The hypothesis stating that the total electrical resistivity of a metal may be equated to the sum of the various resistivities due to the different sources of scattering of free electrons; this also applies to thermal resistivity. Also *Matthiessen rule*.

Matura diamonds (*Min*) Colourless (fired) zircons from Ceylon (Sri Lanka), which on account of their brilliancy are useful as gemstones. A misleading name.

maturation (*BioSci*) Final stages in the development of the germ cells; more generally, the process of becoming adult or fully developed.

maturation divisions (*BioSci*) The divisions by which the germ cells are produced from the primary spermatocyte or oöcyte, during which the number of chromosomes is reduced from the diploid to the haploid number. See *MEIOSIS*.

maturation of behaviour (*Psych*) Used in a variety of ways, although common to all is the idea of a genetically programmed behavioural repertoire that develops as the animal matures and that is, to a greater or lesser extent, relatively insensitive to environmental influence.

maturity (*Geol*) (1) A stage of the geomorphological cycle characterized by maximum relief and well-developed drainage. (2) The ultimate stage in the development of a sediment, characterized by stable minerals and rounded grains.

MATV (*ImageTech*) Abbrev for *master antenna television*, in which a number of individual receivers are fed from one communal antenna.

MAU (*ICT*) Abbrev for *MEDIA ACCESS UNIT*.

maul (*Build*) See *BEEBLE*.

maulstick (*Build*) See *MAHLSTICK*.

Maunder diagram (*Astron*) See *BUTTERFLY DIAGRAM*.

mauveine (*Chem*) Perkin's mauve, the first synthetic dyestuff.

max gross (*Aero*) See *WEIGHT*.

maxilla (*BioSci*) In vertebrates, the upper jaw; a bone of the upper jaw; in Arthropoda, an appendage lying close behind the mouth and modified in connection with feeding. Pl *maxillae*. Adjs *maxillary*, *maxilliferous*, *maxilliform*.

maxillary (*BioSci*) (1) Pertaining to a maxilla or to the upper jaw. (2) A paired membrane bone of the vertebrate skull that forms the posterior part of the upper jaw.

maxillary glands (*BioSci*) See *ANTENNAL GLANDS*.

maxilliped (*BioSci*) In Arthropoda, esp Crustacea, an appendage behind the mouth, adapted to assist in transferring food to the mouth.

maxillofacial implant (*Med*) A type of implant composed of silicone or polyurethane rubber and polytetrafluorethylene for soft facial tissue (such as gum, skin, etc) or polymethyl methacrylate, vitallium, composite materials for harder tissue.

maximally flat (*ICT*) Said of amplifiers so designed that the circuit elements are transformed from filter sections incorporating stray admittances.

maximum and minimum thermometer (*EnvSci*) An instrument for recording the maximum and minimum temperatures of the air between two inspections, usually a period of 24 h. A type widely used is *Six's thermometer*.

maximum continuous rating (*Aero*) See *POWER RATING*.

maximum demand (*ElecEng*) The maximum load taken by an electrical installation during a given period. It may be expressed in kW, kVA or A.

maximum-demand indicator (*ElecEng*) An instrument for indicating the maximum demand which has occurred on a circuit within a given period.

maximum-demand tariff (*ElecEng*) A form of charging for electrical energy in which a fixed charge is made, depending on the consumer's maximum demand, together with a charge for each unit (kW h) consumed.

maximum equivalent conductance (*ElecEng*) The value of the equivalent conductance of an electrolytic solution at infinite dilution with its own solvent.

maximum flying speed (*Aero*) See *FLYING SPEED*.

maximum landing weight (*Aero*) See *WEIGHT*.

maximum permissible concentration (*Radiol*) The recommended upper limit for the dose which may be received during a specified period by a person exposed to ionizing radiation. Also *permissible dose*.