

Chambers Dictionary of Science and Technology

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réseau (*Astron*) A reference grid of fine fiducial lines or points used in image analysis and measurement.

réseau (*ImageTech*) A mosaic formed by rulings of fine coloured lines in red, green and blue used as a screen in some early additive processes of colour photography.

resection (*Med*) Cutting off a part of a bodily organ, esp the ends of bones and other structures forming a joint.

resection (*Surv*) Positional fix of a point which is not going to be occupied by sighting it from two or more known stations.

reserpine (*Pharmacol*) An alkaloid obtained from *Rauwolfia serpentina*, formerly used for the treatment of hypertension.

reserve buoyancy (*Aero*) Potential buoyancy of a seaplane or amphibian which is in excess of that required for normal floating. The downward force required for complete immersion.

reserve buoyancy (*Ships*) Watertight volume above the load water line.

reserved word (*ICT*) Identifier used by the system and therefore not available to a user.

reserve factor (*Aero*) The ratio of actual strength of an aircraft structure to estimated minimum strength for a specified load condition.

reserves (*MinExt*) Block of ore proved by development to warrant extraction. This is normally done by driving levels and winzes or raises so as to expose its four sides in a rectangular panel which is sufficiently sampled and tested. Cf **RESOURCES**.

reservoir (*MinExt*) See **PETROLEUM RESERVOIRS**.

reservoir (*NucEng*) Any volume in an isotope separation plant which is for the purpose of storing material or to ensure smooth operation.

reservoir pressure (*MinExt*) The pressure in a natural oil or gas reservoir which causes flow to the borehole. Maintenance of a proper pressure in the reservoir by not allowing too high an extraction rate is important in ensuring good recovery.

reset (*ElecEng*) General term for returning any circuit or equipment to its initial state, ready for restarting.

reset (*ICT*) To return a computer to its initial state (eg by restoring all registers to known values). See **BOOT**.

reset circuit (*ElecEng*) One which, when operated, performs a **RESET**.

reshaping (*ElecEng*) Restoring a distorted waveform to its intended shape.

residence time (*Genrl*) The term given by dividing the volume of any reservoir or pool or processing unit by the rate of flow through it. The expression gives the average time spent in the pool by the substance or organism under consideration.

resident program (*ICT*) See **MEMORY-RESIDENT PROGRAM**.

residual (*MathSci*) The difference between an observed value and that predicted by a statistical model.

residual activity (*NucEng*) In a nuclear reactor the remaining activity after the reactor is shut down following a period of operation.

residual deposits (*Geol*) Accumulation of rock waste resulting from weathering *in situ*. They cover the whole range of grain size, from residual boulder beds to residual clays.

residual errors (*Phys*) Errors which remain in an observation despite all attempts to eliminate them.

residual field (*Phys*) Magnetic field remaining in a magnetic circuit after removal of the magnetizing force.

residual flux density (*Phys*) The magnetic flux density of a bulk material sample when a magnetizing field is restored to zero after saturation has been achieved. Also **remanent flux density**.

residual gas (*Electronics*) Small amount of gas which inevitably remains in a 'vacuum' tube after pumping. If present to excess, it causes erratic operation of the tube, which is said to be 'soft'.

residual induction (*Phys*) See **RESIDUAL FLUX DENSITY**.

residually excited linear predictive coding (*ICT*) A type of **LINEAR PREDICTIVE CODING** in which the spectral coefficients derived from speech are used to inverse-filter it, giving a residual signal of which the low-frequency components are transmitted. The high-frequency components are reconstructed at the receiver and the reconstituted residual signal used to excite a synthesizer controlled by the spectral coefficients to recreate the original speech.

residual magnetization (*Phys*) Magnetization remaining in a ferromagnetic material after the exciting magnetic field has been removed. See **REMANENCE**.

residual resistance (*Phys*) Electrical resistance persisting at temperatures near zero on the absolute scale, arising from crystal irregularities and impurities, and in alloys.

residual stress (*Eng*) Stresses remaining within a material after processing. For equilibrium, residual tensile stresses must be balanced by compressive ones and vice versa. Also **internal stress**.

residual volume (*Med*) Volume of air left in the lungs after the strongest possible forced expiration, usually of the order of 1500 cm³ in humans.

residue (*FoodSci*) Substance, eg pesticide, fertilizer, hormone, plastic monomer, present in a food product as a result of **CARRYOVER** or **MIGRATION** usually in parts per million, billion or trillion. Statutory acceptable limits for residues are in force in most countries.

residue (*MathSci*) (1) The *n*th power residues of *p* are the remainders when *r_n*, for *r* = 1, 2, 3, ..., are divided by *p*. Thus the quadratic residues of 13 are 1, 3, 4, 9, 10 and 12. (2) Of an analytic function *f*(*z*) at an isolated singularity,

$$\frac{1}{2\pi c} \int_c f(z) dz$$

where *c* is a simple closed curve around the singularity, and the singularity is deleted from the region contained therein.

resilience (*Eng*) Stored energy of a strained material, or the work done per unit volume of an elastic material by a bending moment, force, torque or shear force, in producing strain.

resilience (*EnvSci*) The capacity of ecosystems and populations to return to a previous state after they have been disturbed.

resilin (*BioSci*) An elastomeric protein occurring in insects. Cf **ELASTIN**.

resin (*Build, Chem*) A constituent of varnishes or paints, classified as (1) natural resin, eg copal, rosin, amber; (2) synthetic resin, eg alkyd, phenolic, polyurethane. Natural resins are chiefly obtained as the exudation from plants or trees and have a glassy appearance with a slightly yellow-brown colouring. They consist of highly polymerized acids and neutral substances mixed with terpene derivatives. Synthetic resins are specially formulated to impart particular qualities to coatings such as hardness, flexibility, chemical resistance, etc.

resin (*Plastics*) The term resin was widely but loosely used to describe any synthetic plastics material. Now, more precisely, it is applied to a thermosetting polymer prior to curing, eg epoxy resin, polyester resin. See **panel on THERMOSETS**.

resinates (*Chem*) Calcium, magnesium, aluminium, iron, nickel, cobalt, zinc, tin, manganese and lead salts or **ROSIN**, obtained by fusion of rosin with metal oxides.

resin-bonded plywood (*Build*) Plywood in which the wood veneers are held together with synthetic resin, glues, or glue-impregnated paper and finally formed with pressure and heat.

resin duct (*BioSci*) A duct of schizogenous origin lined with resin-secreting cells, as in the leaves and sometimes wood of conifers. Also **resin canal**.

resin-in-pulp (*MinExt*) Ion-exchange method of continuously treating ores by acid leaching. Baskets containing **ION-EXCHANGE RESINS** are jigged through tanks containing finely ground ore pulp as it flows from vessel to vessel. Abbrev **RIP**.