
McGraw-Hill Dictionary
CHEMICAL TERMS

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Editor

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On the cover: Photomicrograph of potassium nitrate under high pressure, a specimen contained in a diamond-anvil high-pressure cell. (National Bureau of Standards)

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red ochre See ferric oxide.

redox potential Voltage difference at an inert electrode immersed in a reversible oxidation-reduction system; measurement of the state of oxidation of the system. Also known as oxidation-reduction potential.

redox potentiometry Use of neutral electrode probes to measure the solution potential developed as the result of an oxidation or reduction reaction.

redox system A chemical system in which reduction and oxidation (redox) reactions occur.

redox titration A titration characterized by the transfer of electrons from one substance to another (from the reductant to the oxidant) with the end point determined colorimetrically or potentiometrically.

red phosphorus An allotropic form of the element phosphorus; violet-red, amorphous powder subliming at 416°C, igniting at 260°; insoluble in all solvents; nonpoisonous.

red potassium chromate See potassium dichromate.

red potassium prussiate See potassium ferricyanide.

red precipitate See mercuric oxide.

red prussiate of potash See potassium ferricyanide.

red prussiate of soda See sodium ferricyanide.

red tetrazolium See triphenyltetrazolium chloride.

reducer See reducing agent. A fitting having a larger size at one end than at the other and threaded inside, unless specifically flanged or for some special joint.

reducing agent Also known as reducer. 1. A material that adds hydrogen to an element or compound. 2. A material that adds an electron to an element or compound, that is, decreases the positiveness of its valence.

reducing atmosphere An atmosphere of hydrogen (or other substance that readily provides electrons) surrounding a chemical reaction or physical device; the effect is the opposite to that of an oxidizing atmosphere.

reducing flame A flame having excess fuel and being capable of chemical reduction, such as extracting oxygen from a metallic oxide.

reducing sugar Any of the sugars that because of their free or potentially free aldehyde or ketone groups, possess the property of readily reducing alkaline solutions of many metallic salts such as copper, silver, or bismuth; examples are the monosaccharides and most of the disaccharides, including maltose and lactose.

reduction 1. Reaction of hydrogen with another substance. 2. Chemical reaction in which an element gains an electron (has a decrease in positive valence).

reduction cell A vessel in which aqueous solutions of salts or fused salts are reduced electrolytically.

reduction potential The potential drop involved in the reduction of a positively charged ion to a neutral form or to a less highly charged ion, or of a neutral atom to a negatively charged ion.

reference electrode A nonpolarizable electrode that generates highly reproducible potentials; used for pH measurements and polarographic analyses; examples are the calomel electrode, silver-silver chloride electrode, and mercury pool.

reflectance spectrophotometry Measurement of the ratio of spectral radiant flux reflected from a light-diffusing specimen to that reflected from a light-diffusing standard substituted for the specimen.

Reformatsky reaction A condensation-type reaction between ketones and aliphatic acids in the presence of zinc or magnesium, such as $R_2CO + Zn \rightarrow (ZnO \cdot HBr) + R_2C(OH)CH_2COOR$.

refractory hard metals True chemical compounds composed of two or more elements in the crystalline form, and having a very high melting point and high hardness.

refrigerant 23 See fluoroform.

regenerant A solution whose purpose is to restore the activity of an ion-exchange resin.

regioselective Pertaining to a chemical reaction which favors a single structural isomer, leading to its yield being greater than that of the other isomers in the reaction. Sometimes known as regiospecific.

regiospecific 1. Referring to a chemical reaction which has the potential for two or more structural isomers, but actually produces only one. 2. Descriptive of a reaction.

Reichert-Meissl number An indicator of the measure of volatile soluble solids in a sample.

Reimer-Tiemann reaction Formation of phenolic aldehydes by reaction of carbon dioxide and chloroform in the presence of an alkali.

Reinecke's salt $[(NH_3)_2Cr(SCN)_4]NH_4 \cdot H_2O$ A reagent to detect mercury as a color or a precipitate, and to isolate organic bases (such as proline or arginine).

Reinsch test A test for detecting small amounts of arsenic, silver, bismuth, and mercury.

relative fugacity The ratio of the fugacity in a given state to the fugacity in a standard state.

relative stability test A color test using methylene blue that indicates whether a sample present in a sewage plant's effluent or polluted water is exhausted.

relative volatility The volatility of a standard material whose relative volatility definition equal to unity.

relaxed peak process See quasi-fission.

repellency Ability to repel water, or being hydrophobic; opposite to wettability.

replication The formation of a faithful mold or replica of a solid that is transparent to the penetration by an electron microscope beam; can use plastic (such as epoxy) or vacuum deposition (such as of carbon or metals) to make the mold.

resacetophenone See 2,4'-dihydroxyacetophenone.

resbenzophenone See benzo-resorcinol.

resin Any of a class of solid or semisolid organic products of natural or synthetic origin with no definite melting point, generally of high molecular weight; many are polymers.

resin of copper See cuprous chloride.

resinography Science of resins, polymers, plastics, and their products; includes study of morphology, structure, and other characteristics relatable to composition.

resinoid A thermosetting synthetic resin either in its initial (temporarily fusible) or its final (infusible) state.

resite See C-stage resin.

resolution See resolving power.

resolving power A measure of the ability of a spectroscope or interferometer to separate spectral lines of nearly equal wavelength, equal to the average wave-