

catalyst

Also contains definitions of: heterogeneous catalysis, homogeneous catalysis

A substance that increases the rate of a reaction without modifying the overall standard Gibbs energy change in the reaction; the process is called catalysis. The catalyst is both a reactant and product of the reaction. The words catalyst and catalysis should not be used when the added substance reduces the rate of reaction (see inhibitor). Catalysis can be classified as homogeneous catalysis, in which only one phase is involved, and heterogeneous catalysis, in which the reaction occurs at or near an interface between phases. Catalysis brought about by one of the products of a reaction is called autocatalysis. Catalysis brought about by a group on a reactant molecule itself is called intramolecular catalysis. The term catalysis is also often used when the substance is consumed in the reaction (for example: base-catalysed hydrolysis of esters). Strictly, such a substance should be called an activator.

See also: autocatalytic reaction, bifunctional catalysis, catalytic coefficient, electron-transfer catalysis, general acid catalysis, general base catalysis, intramolecular catalysis, micellar catalysis, Michaelis-Menten kinetics, phase-transfer catalysis, pseudo-catalysis, rate of reaction, specific catalysis

Source:

PAC, 1996, 68, 149 (*A glossary of terms used in chemical kinetics, including reaction dynamics (IUPAC Recommendations 1996)*) on page 155

See also:

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1093

PAC, 1993, 65, 2291 (*Nomenclature of kinetic methods of analysis (IUPAC Recommendations 1993)*) on page 2293

PAC, 1990, 62, 2167 (*Glossary of atmospheric chemistry terms (Recommendations 1990)*) on page 2178