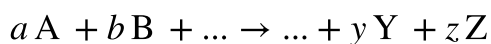


stoichiometry

The term refers to the relationship between the amounts of substances that react together in a particular chemical reaction, and the amounts of products that are formed. The general stoichiometric equation:



provides the information that a moles of A reacts with b moles of B to produce y moles of Y and z moles of Z. The stoichiometry of a reaction may be unknown, or may be very complex. For example, the thermal decomposition of acetaldehyde yields mainly methane and carbon monoxide, but also a variety of minor products such as ethane, acetone and diacetyl. The stoichiometric equation:



is therefore only an approximate one. Even when the overall stoichiometry of a reaction is well defined, it may be time-dependent in that it varies during the course of a reaction. Thus if a reaction occurs by the mechanism $A \rightarrow X \rightarrow Y$, and X is formed in substantial amounts during the course of the process, the relationship between the amounts of A, X and Y will vary with time, and no one stoichiometric equation can represent the reaction at all times.

Source:

PAC, 1996, 68, 149 (*A glossary of terms used in chemical kinetics, including reaction dynamics (IUPAC Recommendations 1996)*) on page 187