



Kinetic classification of a chemical reaction

Chemical kinetics

The equation of a chemical reaction does not reflect the reality of the transformation it models. It is merely the overall balance of the transformation. A chemical system evolves in stages. The succession of effective shocks leading from the initial state to the final state is called the reaction mechanism, and takes a certain amount of time.

The time evolution of a chemical system is called chemical kinetics. The kinetic study of a chemical system consists in studying this temporal evolution.

Rapid and instantaneous transformations

In the case of certain chemical transformations, the evolution from the initial state to the final state takes place in a matter of seconds. Such transformations are called rapid.

Sometimes, the evolution is so rapid that it is invisible to the naked eye. The transformation is then said to be instantaneous.



Slow and very slow transformations



In the case of certain chemical transformations, the evolution from the initial to the final state takes several minutes, or even hours. Such transformations are called slow. Sometimes, it can take many years, even centuries or millennia to reach the final state. In this case, the transformation is very slow.

Inert systems

In the case of certain chemical transformations, there is no discernible change in the system. These transformations are “not possible”, and the system is said to be inert.

Note: When a chemical system has reached its final state, the transformation no longer appears to be evolving. However, the term “inert” is not used. The system is said to be stationary.

