

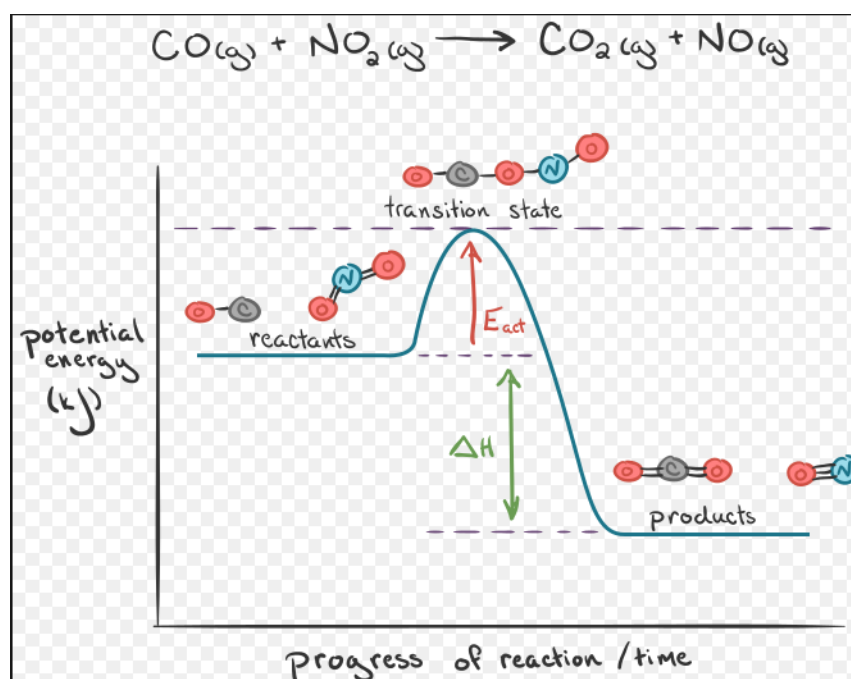
Answer on Question #61043, Chemistry / General Chemistry

Conditions: I am confused. In relevance to reaction rate, on a potential energy vs progress of reaction graph, what does the potential energy actually mean. Is it the same as the kinetic energy. I understand that as the potential energy increases you get closer to a transition state, but how does kinetic energy fit into this for the particles. Is the potential energy equal to the kinetic energy, as in a higher temperature the particles move more, with more collisions, hence a higher potential energy. please help.

Solution:

While kinetic energy is always characterized by the body relative to the selected reference system, the potential energy is always characterized by the body to the source of power (force field). The kinetic energy of a body is determined by its speed relative to the selected reference system; potential - location of bodies in the field.

The main physical meaning is not itself the potential energy and its change. The figure below shows the change (decrease) the potential energy at the end of the reaction



each molecule has a kinetic energy as is in thermal motion.

Diffusion control

The rate-determining step can also be the transport of reactants to where they can interact and form the product. This case is referred to as diffusion control and, in general, occurs when the formation of product from the activated complex is very rapid and thus the provision of the supply of reactants is rate determining. Not encounter any surface active particles leads to the reaction section.

Only those particles of the system are capable to undergo a reaction which have a potential energy higher than the potential barrier of the reaction. Others do not lead to a collision of the reaction. The difference of the potential energy is equal to $\Delta U = U_2 - U_1$.