

The Arrhenius Equation

- increase temperature, inc. reaction rates
- rxn rates are α to energy, collisions, temp. & orient
- $k = Ae^{-E_a/RT}$

k = rxn rate constant

A = frequency of collisions

$-E_a/RT$ = fraction of molecules with energy necessary for reaction

$$k = Ae^{-\frac{E_a}{RT}} \quad \text{or} \quad \ln k = -\frac{E_a}{RT} + \ln A$$

Where:

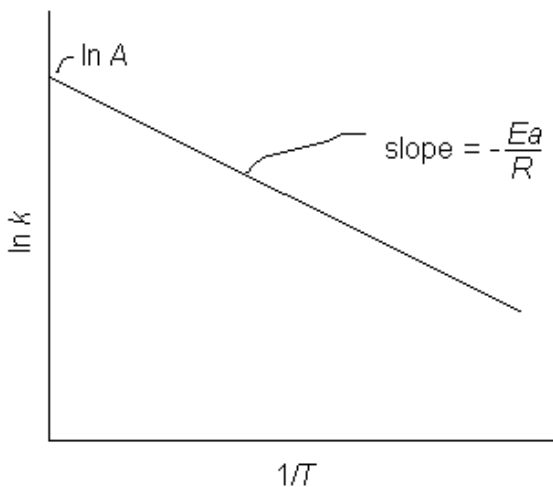
k = Chemical Reaction Rate

A = Pre-exponential Factor

E_a = Activation Energy

R = Gas Constant

T = Temperature in Kelvin



$$\ln \frac{k_2}{k_1} = \frac{E_a}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$$