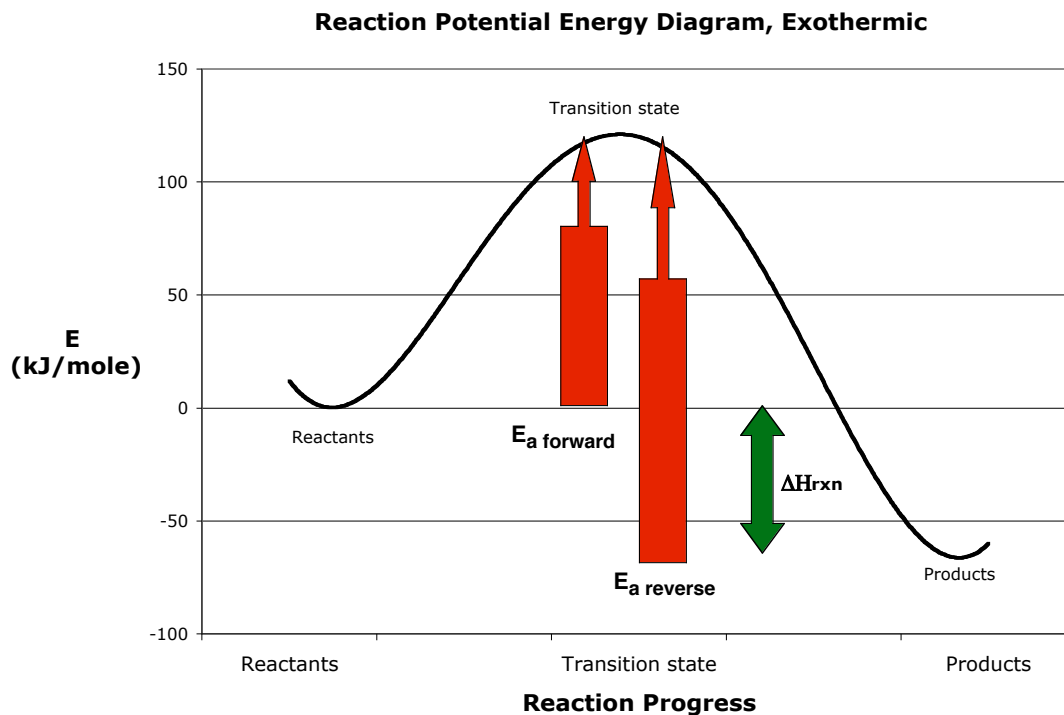


TEMPERATURE DEPENDENCE OF RATE CONSTANTS



Arrhenius Equation $k = A e^{(-E_a/RT)}$

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

TEMPERATURE DEPENDENCE OF EQUILIBRIUM CONSTANTS

van't Hoff Equation $\ln \left(\frac{K_2}{K_1} \right) = \left(\frac{\Delta H^\circ}{R} \right) \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$

assuming ΔH° is not changing with T

raising the T of an **exothermic reaction** will lower the value of $K_{\text{equilibrium}}$

raising the T of an **endothermic reaction** will increase the value of $K_{\text{equilibrium}}$