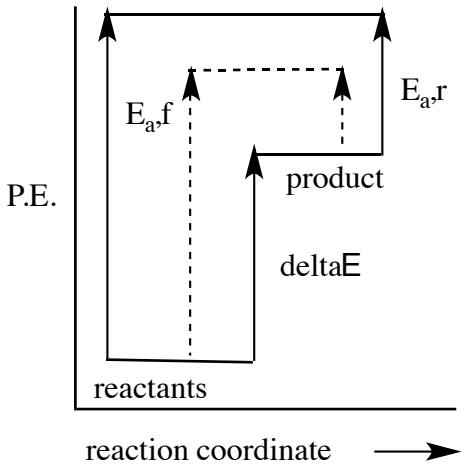
LECTURE 34

1. A catalyst lowers an $E_{a,f}$ from 358 kJ mol^{-1} to 350. kJ mol^{-1} for a particular reaction. Determine the change (if any) in the:
   (a) ΔE for the reaction and
   (b) $E_{a,r}$ for the reaction.

   (a) A catalyst does not affect the ΔE for the reaction. The ΔE is a State Function (i.e. independent of path).
   (b) The $E_{a,r}$ is also lower by 8 kJ.

2. (a) Draw a reaction coordinate diagram with "potential energy (P.E.)" on the Y-axis and "Reaction Coordinate ->" on the X-axis for an endothermic reaction.
   (b) Show as a solid line, the activation energy barrier for the uncatalyzed reaction, and show as a dashed line, the activation energy barrier for the catalyzed reaction.
   (c) Label the diagram with "products", "reactants," and "ΔE."



Additional Book Problems:
Atkins and Jones, Chemical Principles, fifth edition:
Chapter 14.16, problem 14.95

5.111 Principles of Chemical Science
Fall 2014