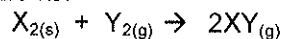


Potential Energy Diagrams - Assignment

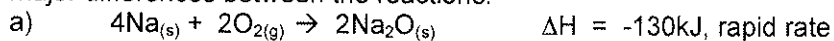
- 1) Draw a potential energy diagram for the following reaction given that ΔH reverse = +20 kJ and E_a (forward) = 25 kJ.



On the diagram, indicate:

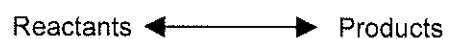
- E_a (reverse)
- ΔH (forward)
- the activated complex
- whether the reaction is exothermic or endothermic
- an appropriate scale on the PE axis

- 2) Sketch PE diagrams for the following two reactions. Your diagrams should indicate two major differences between the reactions.



- 3) ΔH for the reaction converting graphite (a form of carbon) to diamond (another form of carbon) is only 2 kJ. Suggest a reason, in terms of reaction kinetics, why the reaction is so difficult to carry out.

4) For a general reaction:



a) What happens to the [reactants] as the reaction proceeds?

b) What happens to the [products]?

c) What happens to the rate of the forward reaction as a result of your answer to 4 (a)?

5) Draw a KE curve for a general reaction. Show how the curve changes when the temperature is increased and shade the area that shows the additional particles that can react.