Chemistry 11

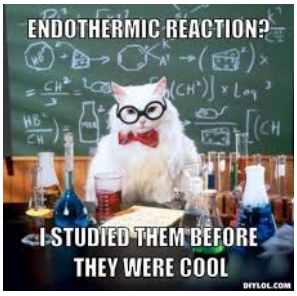
Stoichiometry VI

Name:
Date:
Block:

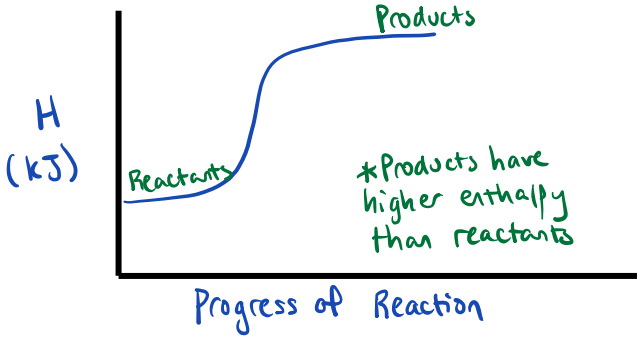
1. Enthalpy (Heat Energy)

Enthalpy (Heat Energy)

- Systems can either gain energy or release energy, often felt as heat
- Energy is measured as enthalpy
- Symbol = H
- Unit = kJ (kilojoule)

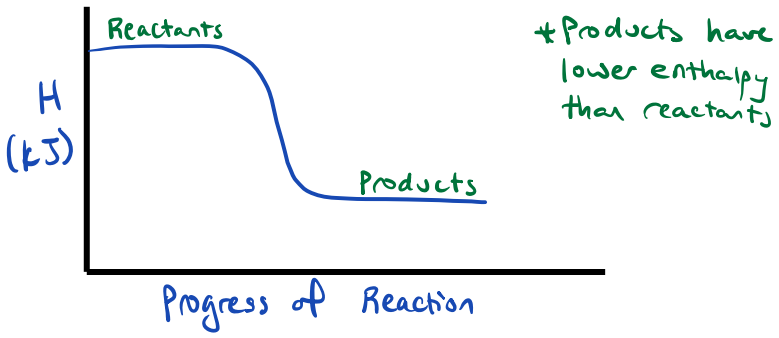


Gain Energy



- Endo thermic
- Δ = "change in"
- ΔH = $H_{final} - H_{initial}$
  = $H_{products} - H_{reactants}$
  = positive value
- Reactants + Heat → Products
- System feels cooler
- Reactants favoured.

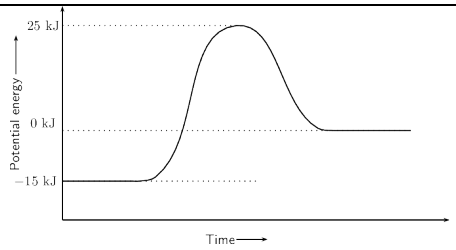
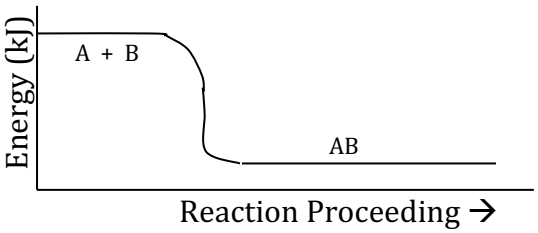
Release Energy



- Exo thermic
- ΔH = $H_{final} - H_{initial}$
  = $H_{products} - H_{reactants}$
  = negative value
- Reactants → Products + Heat
- System feels warmer
- Products favoured.

Note: Systems favour lower energy states (i.e. minimum enthalpy)

Practice:

Reaction:	Is the reaction endothermic or exothermic?	Which side is favoured?
1. K + D + heat → G	endothermic	reactants
2. U → C ΔH = - 60 kJ	exothermic	products
3. F + A → T + I ΔH = 60 kJ	endothermic	reactants
4. A + B → C + heat	exothermic	products
5. 	endothermic	reactants
6. H_2 + Cl_2 → 2 HCl + 432 kJ	exothermic	products
7. $12CO_2$ + $11H_2O$ → $C_{12}H_{22}O_{11}$ + 12 O_2 ΔH = 5638 kJ	endothermic	reactants
8. 	exothermic	products
9. C + D → CD ΔH= -65.7 kJ	exothermic	products
10. E + F + 437 kJ → G + H	endothermic	reactants