**Gibbs free energy and Equilibrium**

K – indicates whether reactants or products are favoured at equilibrium

ΔG – indicates whether the forward or reverse reaction is favoured

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| --- | --- | --- |
| **Equilibrium constant** | **Description** | **Gibbs free energy change** |
| K~ 1 | Neither products nor reactants favoured | ΔG = 0 |
| K >>1 | Products favoured | ΔG<0 |
| K<<1 | Reactants favoured | ΔG>0 |

I think in class I may have accidentally used the ~ , >>, and << for the Gibbs free energy change as well as for the K value. It should be as shown above. ΔG of 0 means equilibrium

Quantitatively, the reaction between ΔG, temperature, and K can be described by the equation

ΔG° = -RTlnK or lnK = - ΔG°/RT

NOTE: R = 8.31 JK-1mol-1 and ΔG° values are generally in kJ/mol. One of these must be changed if you want your calculations to work!!