

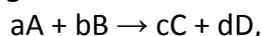
Answer on Question #41751 - Chemistry - Other

Question

If a reaction has large value of K_C , will it go to completion and why?

Answer

Let us consider a chemical reaction in general form:



where A and B are reactants, C and D are products and a, b, c and d are stoichiometric coefficients.

The expression of K_C for the reaction:

$$K_C = \frac{[C]^c [D]^d}{[A]^a [B]^b},$$

where [A], [B], [C] and [D] molarity of reactants and products at the equilibrium.

An equilibrium reaction proceeds until reaching equilibrium. And the value of K_C characterizes this equilibrium. Since the products are in the numerator of K_C expression, the greater the K_C the greater the concentration of products at the equilibrium, and vice versa: the small value of K_C indicates great amount of reactants and small amount of products at the equilibrium.

So, if a reaction has large value of K_C , amount of products considerably exceeds the amount of reactants, and this means the reaction reaches close to completion.