

Answer on Question #75773 - Chemistry - Physical Chemistry

Question: For a reaction $A(g) \rightarrow B(g)$ at equilibrium. The partial pressure of B is found to be one fourth of the partial pressure of A. The value of ΔG° of the reaction $A \rightarrow B$ is

(1) $RT \ln 4$

(2) $-RT \ln 4$

(3) $RT \log 4$

(4) $-RT \log 4$

Solution:

$$\Delta G = \Delta G_0 + RT \ln(P_B/P_A);$$

$$\Delta G_0 = -RT \ln(P_B/P_A);$$

$$\Delta G_0 = -RT \ln(1/4) = RT \ln 4.$$

Answer: $RT \ln 4$.

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