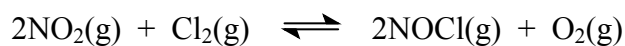


Calculate the partial pressure equilibrium constant, K_p , at 35 °C for the reaction:

**Marks**

7

 $K_p =$

What is the standard free energy change, ΔG° , for the forward reaction (in kJ mol^{-1}) at 35 °C?

 $\Delta G^\circ =$

If 0.150 mol of $\text{O}_2(\text{g})$ and 3.00×10^{-4} mol of $\text{NO}_2(\text{g})$ are added to the 1.00 L flask, determine the free energy change, ΔG , (in kJ mol^{-1}) as the system moves to its new equilibrium point.

 $\Delta G =$

Will the amount of $\text{NO}_2(\text{g})$ in the flask increase or decrease as the system moves to its new equilibrium position? Explain.