

79541



$$K = [\text{NO}_2]^2 / [\text{N}_2\text{O}_4]$$

Let

$$P[\text{NO}_2] = x$$

$$P[\text{N}_2\text{O}_4] = y$$

Then

$$x + y = 101300 \text{ Pa}$$

Because N_2O_4 is 50% dissociated, it's initial pressure of N_2O_4 was $2y$, and $x = 2 * (2y - y) = 2y$

$$\begin{cases} x + y = 101300 \\ x = 2y \end{cases}$$

$$\begin{cases} 3y = 101300 \\ x = 2y \end{cases}$$

$$\begin{cases} y = 33767 \\ x = 67533 \end{cases}$$

Consequently,

$$K = 67533^2 / 33767 = 135064 \text{ Pa}$$

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