

Answer on Question #65476 - Chemistry - General Chemistry

Question: What is  $K_p$  at 123 c for the reaction if  $K_c$  is  $2.24 \times 10^{-22}$  at the same temperature?

**Solution:**

The ratio of equilibrium constants can be represented as follows:

$$K_p = K_c \cdot (R \cdot T)^{\Delta v}$$

For the reactions occurring without changing the number of moles of gaseous reactants substances:  
 $\Delta v = 0$  , then:

$$K_p = K_c = 2.24 \cdot 10^{-22}$$

If  $\neq 0$  , example  $v = 1$ , then:

$$K_p = K_c \cdot (R \cdot T)^{\Delta v} = 2.24 \cdot 10^{-22} \cdot 8.314 \cdot 396 = 7.37 \cdot 10^{-19} Pa$$

**Answer:**  $7.37 \cdot 10^{-19} Pa$

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