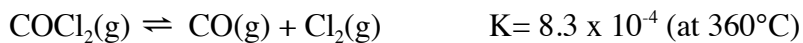


LECTURE 18

1. Phosgene (COCl_2) is a chemical warfare agent that decomposes by the reaction:



Calculate the $[\text{CO}]$, $[\text{Cl}_2]$, and $[\text{COCl}_2]$ when 10.0 mol of phosgene decompose at 360°C and reach equilibrium in a 5.00-L flask.

2. For the reaction in question 1, predict whether the reaction will shift toward products or reactants when the following stress to the system is applied.

(a) $\text{COCl}_2(g)$ is added.

(b) $\text{Cl}_2(g)$ is added.

3. The decomposition of nitrosyl bromide (NOBr) proceeds by the following reaction:



Calculate the $[\text{NOBr}]$, $[\text{NO}]$, and $[\text{Br}_2]$ when 10.0 mol of nitrosyl bromine is placed in a 5.00-L closed vessel and allowed to decompose.

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5.111 Principles of Chemical Science
Fall 2014

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