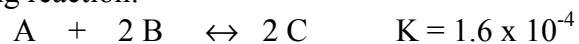


Lecture Notes J: Chemical Equilibrium II

Problem

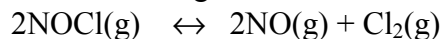
Consider the following reaction:



50.0 ml of a 0.150M solution of A is mixed with 25.0 ml of a 0.250M solution of B. At equilibrium, what is the concentration of each of the species ([A], [B], [C]) in the solution?

Concept

Consider the following reaction



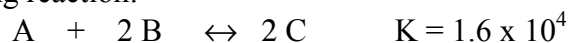
with initial conditions: $[\text{NOCl}]_0 = 1.0 \text{ M}$; $[\text{NO}]_0 = 0.5 \text{ M}$; $[\text{Cl}_2]_0 = 0.0$

Which is the correct expression for the equilibrium concentrations?

- A. $[\text{NOCl}] = 1.0 - 2x$ $[\text{NO}] = 0.5 + 2x$ $[\text{Cl}_2] = +2x$
- B. $[\text{NOCl}] = 2.0 - 2x$ $[\text{NO}] = 0.5 + 2x$ $[\text{Cl}_2] = +x$
- C. $[\text{NOCl}] = 1.0 - 2x$ $[\text{NO}] = 0.5 + 2x$ $[\text{Cl}_2] = +x$
- D. $[\text{NOCl}] = 1.0 + x$ $[\text{NO}] = 0.5 + x$ $[\text{Cl}_2] = -x$

Problem

Consider the following reaction:



50.0 ml of a 0.150M solution of A is mixed with 25.0 ml of a 0.250M solution of B. At equilibrium, what is the concentration of each of the species ($[\text{A}]$, $[\text{B}]$, $[\text{C}]$) in the solution?