Lecture Notes J: Chemical Equilibrium II

Problem

Consider the following reaction:

$$A + 2\,B \leftrightarrow 2\,C \qquad K = 1.6 \times 10^{-4}$$

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

$2NOCl(g) \leftrightarrow 2NO(g) + Cl_2(g)$

with initial conditions: $[NOCl]_0 = 1.0$ M ; $[NO]_0 = 0.5$ M ; $[Cl2]_0 = 0.0$

Which is the correct expression for the equilibrium concentrations?

A. [NOCl] = 1.0-2x [NO] = 0.5+2x $[Cl_2] = +2x$

B. [NOCl] = 2.0-2x [NO] = 0.5+2x $[Cl_2] = +x$

C. [NOCl] = 1.0-2x [NO] = 0.5+2x $[Cl_2] = +x$

D. [NOCl] = 1.0+x [NO] = 0.5+x $[Cl_2] = -x$

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