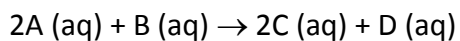


Answer on Question #82384, Chemistry / General Chemistry

a solution which is 0.368 M in A (aq) and 0.567 M in B (aq). There are no other solutes initially. Reaction $2A(aq) + B(aq) \rightleftharpoons 2C(aq) + D(aq)$ occurs. At equilibrium, the concentration of C (aq) is 0.147 M. What is the value of the equilibrium constant for this reaction?

Solution

$$K_c = \frac{[C]^2[D]}{[A]^2[B]}$$

	[A]	[B]	[C]	[D]
Initial	0.368 M	0.567 M	0	0
Change	0.147 M	$0.147/2 = 0.0735$ M	0.147 M	$0.147/2 = 0.0735$ M
Equilibrium	$0.368 - 0.147 =$ 0.221 M	$0.567 - 0.0735$ $= 0.4935$ M	0.147 M	0.0735 M

$$K_c = \frac{[0.147]^2[0.0735]}{[0.221]^2[0.4935]} = 0.066$$

Answer: 0.066Answer provided by www.AssignmentExpert.com