Chapter 13: Chemical Kinetics

1. Chlorine dioxide reacts in basic water to form chlorite and chlorate according to the following chemical equations.

\[
2\text{ClO}_2^{\text{aq}} + 2\text{OH}^-^{\text{aq}} \rightarrow \text{ClO}_2^{-}\text{(aq)} + \text{ClO}_3^{-}\text{(aq)} + \text{H}_2\text{O(l)}
\]

Under a certain set of conditions, the initial rate of disappearance of chlorine dioxide was determined to be \(2.30 \times 10^{-1}\) M/s. What is the initial rate of appearance of chlorite ion under those same conditions?

A. \(5.75 \times 10^{-2}\) M/s  
B. \(1.15 \times 10^{-1}\) M/s  
C. \(2.30 \times 10^{-1}\) M/s  
D. \(4.60 \times 10^{-1}\) M/s  
E. \(9.20 \times 10^{-1}\) M/s

Ans: B   Category: Medium   Section: 13.1