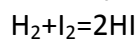


30485, Chemistry, Inorganic Chemistry



what is the equilibrium constant if .0862 moles/liter H_2 , .263 moles/liter I_2 , and 1.02 moles/liter HI are found to be concentrations that occur in equilibrium?

Solution:

The equilibrium constant for this equation is:

$$K_{\text{eq}} = \frac{[\text{HI}]_{\text{eq}}^2}{[\text{H}_2]_{\text{eq}} \cdot [\text{I}_2]_{\text{eq}}}$$

In this equation $[\text{HI}]$, $[\text{H}_2]$ and $[\text{I}_2]$ are concentrations of corresponding compounds that occur in equilibrium.

So, equilibrium constant for this equation is:

$$K_{\text{eq}} = \frac{1.02^2}{0.0862 \cdot 0.263} = 45.89$$

Answer:

The equilibrium constant is 45.89.