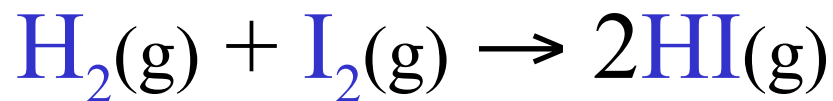
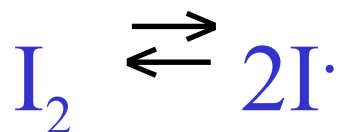


Reaction Mechanism

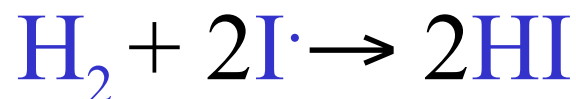


$$\text{rate} = k [\text{H}_2] [\text{I}_2] \quad \checkmark$$

step 1



step 2



$$\text{rate} = k [\text{H}_2] [\text{I}\cdot]^2$$

$$\text{rate} = k [\text{H}_2] K_{\text{eq}} [\text{I}_2]$$

$$\text{rate} = k' [\text{H}_2] [\text{I}_2] \quad \checkmark$$

$$K_{\text{eq}} = \frac{[\text{I}\cdot]^2}{[\text{I}_2]} = \frac{k_f}{k_r}$$

$$[\text{I}\cdot]^2 = K_{\text{eq}} [\text{I}_2]$$