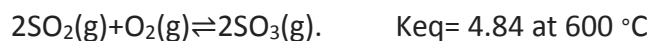


Answer on Question #71483 – Chemistry – General Chemistry

Task:

An equilibrium mixture of the following reaction was found to have $[SO_3] = 0.431 \text{ M}$ and $[O_2] = 0.175 \text{ M}$ at $600 \text{ }^\circ\text{C}$. What is the concentration of SO_2 ?



Solution:

The expression for the equilibrium constant:

$$K_{eq} = \frac{[SO_3]^2}{[SO_2]^2 * [O_2]}$$

Then,

$$[SO_2]^2 = \frac{[SO_3]^2}{K_{eq} * [O_2]} = \frac{[0.431]^2}{4.84 * [0.175]} = 0.2193;$$

$$[SO_2] = 0.2193^{1/2} = 0.468$$

Answer: $[SO_2] = 0.468 \text{ M}$.

Answer provided by <https://www.AssignmentExpert.com>