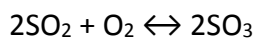


Answer on Question #67160 – Chemistry – General Chemistry

If the equilibrium constant is 53 kJ mol at 500 K and the actual concentrations of the reactants are $[SO_3] = 25$ atm, $[O_2] = 1$ atm and $[SO_2] = 0.5$ atm. Which direction will the reaction precede?

Solution.



$$Q = \frac{[SO_3]^2}{[SO_2]^2 [O_2]} = \frac{25^2}{0.5^2 \cdot 1} = 2500 \text{ kJ mol}$$

$$K = 53 \text{ kJ mol}$$

$Q > K$, the system will consume reactants (reverse reaction; shifts to the left)