Case 1

Species: Oa(X), Oa(a), O(8P)

$$\begin{array}{lll} e + O_{0}(x) & \leftrightarrow & e + O_{0}(a) & k_{former} = 6 \times 10^{-16}; & k_{back} = 1.3 \times 10^{-15} \\ e + O_{0}(x) & \to & e + 2 O(^{3}P)^{*} & k = 9.6 \times 10^{-16} \\ e + O_{0}(a) & \to & e + 2 O(^{3}P)^{*} & k = 2.2 \times 10^{-15} \\ O_{0}(a) + O(^{3}P) & \to & O_{0}(x) + O(^{3}P) & k = 7 \times 10^{-22} \\ O_{0}(a) + O(^{3}P) + O_{0}(x) & \to & O_{0}(x) + O(^{3}P) + O_{0}(x) & k = 3 \times 10^{-44} \\ 2O(^{3}P) + O_{0}(x) & \to & 2O_{0}(x) & k = 3 \cdot 2 \times 10^{-46} \\ O_{0}(a) + \text{woll} & \to & O_{0}(x) + \text{woll} & k = 5 \cdot 2 \\ O(^{3}P) + \text{wall} & \to & \frac{1}{8} O_{0}(x) + \text{wall} & k = 5 \cdot 3 \end{array}$$

Conditions:

gas Pressure = 1 Torr = 133.332 Pa gas temperature = 377 K electron density = 4.6 × 10 m