

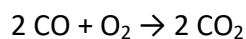
Answer on Question #77057, Chemistry / Organic Chemistry

Question:

How will the rate of reaction between carbon monoxide and oxygen change if concentration of initial compounds will increase by 5 times?

Solution:

The balanced equation:



Rate of the reaction: $r_{\text{init}} = k \cdot [\text{CO}]^2 \cdot [\text{O}_2]$, where k is rate constant.

So, if concentration will increase by 5 times, the rate will be:

$$r = k \cdot (5[\text{CO}])^2 \cdot (5[\text{O}_2]) = 5^2 \cdot 5 \cdot (k \cdot [\text{CO}]^2 \cdot [\text{O}_2]) = 125 \cdot r_{\text{init}}$$

Answer:

125 times