Answer on Question #52592 - Chemistry – Inorganic Chemistry

Question

Ethanol burns according to the following equation. If 15.0 mol of C_2H_5OH burns this way, how many moles of oxygen are needed?

$$C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$$

Answer:

According to the reaction equation:

1 mol of C₂H₅OH needs 3 mol of O₂

15.0 mol of $C_2H_5OH - x$ mol of O_2

$$x = \frac{15.0 \cdot 3}{1} = 45.0 \ mol$$

Answer: 45.0 mol of oxygen are needed