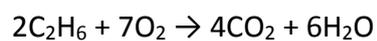


Answer on Question #57456 – Chemistry – General chemistry

Question:

What mass of O₂ is needed to react completely with 5.33 g of C₂H₆.

Solution:



$$n(\text{C}_2\text{H}_6) = \frac{m(\text{C}_2\text{H}_6)}{M(\text{C}_2\text{H}_6)} = \frac{5.33 \text{ g}}{30 \text{ g/mol}} = 0.178 \text{ mol}$$

$$n(\text{O}_2) = \frac{7}{2}n(\text{C}_2\text{H}_6) = 0.623 \text{ mol}$$

$$m(\text{O}_2) = n(\text{O}_2) \cdot M(\text{O}_2) = 0.623 \text{ mol} \cdot 32 \text{ g/mol} = 19.94 \text{ g}$$

Answer: 19.94 g O₂.