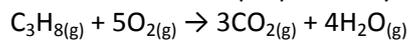


## Answer on Question #40464, Chemistry, Other

### Question

The combustion of propane may be described by the chemical equation,



How many grams of  $\text{O}_{2(g)}$  are needed to completely burn 97.3 g of  $\text{C}_3\text{H}_{8(g)}$ ?

### Answer

$$M(\text{C}_3\text{H}_8) = 44 \text{ g/mol}$$

$$n(\text{C}_3\text{H}_8) = m(\text{C}_3\text{H}_8)/M(\text{C}_3\text{H}_8) = 97.3 \text{ g} / 44 \text{ g/mol} = 2.21 \text{ mol}$$

$$n(\text{O}_2) = 5 \cdot n(\text{C}_3\text{H}_8) = 5 \cdot 2.21 = 11.05 \text{ mol}$$

$$M(\text{O}_2) = 32 \text{ g/mol}$$

$$m(\text{O}_2) = n(\text{O}_2) \cdot M(\text{O}_2) = 11.05 \text{ mol} \cdot 32 \text{ g/mol} = 353.6 \text{ g}$$

**Answer: 353.6 g**