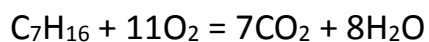


Answer on the question 84064 Chemistry - General Chemistry

At first, let's write reaction formula:



$$m(\text{C}_7\text{H}_{16}) = 10\text{kg} = 10\,000\text{g}$$

$$M(\text{C}_7\text{H}_{16}) = 12 \cdot 7 + 1 \cdot 16 = 100 \text{ g/mole}$$

$$M(\text{CO}_2) = 12 + 2 \cdot 16 = 44 \text{ g/mole}$$

$$n(\text{C}_7\text{H}_{16}) = m(\text{C}_7\text{H}_{16}) / M(\text{C}_7\text{H}_{16}) = 10\,000 / 100 = 100 \text{ mole}$$

$$n(\text{C}_7\text{H}_{16}) / n(\text{CO}_2) = 1/7, \text{ so } n(\text{CO}_2) = 7 n(\text{C}_7\text{H}_{16}) = 700 \text{ mole}$$

$$m(\text{CO}_2) = n(\text{CO}_2) \cdot M(\text{CO}_2) = 700 \cdot 44 = 30\,800\text{g} = 30.8\text{kg}.$$

$$\text{Answer: } m(\text{CO}_2) = 30.8\text{kg}.$$

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