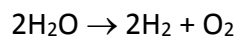


Answer on Question# 44379 Chemistry – Physical Chemistry

Water is decomposed using electricity into its components; hydrogen gas and oxygen gas. If 5.5 moles of water is decomposed, what mass (in grams) of oxygen gas is produced?

Solution



$$n(\text{O}_2) = \frac{1}{2} n(\text{H}_2\text{O}) = \frac{1}{2} \cdot 5,5 \text{ moles} = 2,75 \text{ moles}$$

M (O₂) - Formula mass

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

$$m(\text{O}_2) = n(\text{O}_2) \cdot M(\text{O}_2) = 2,75 \cdot 32 = 88 \text{ (g)}.$$

Answer: 88 g.