

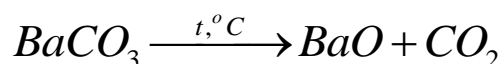
Answer on Question #71045 – Chemistry – General Chemistry

Task:

When heated barium carbonate decomposes, carbon dioxide and barium oxide are produced. How many grams of carbon dioxide are produced when 955 g of barium oxide is produced?

Solution:

The decomposition reaction equation:



By the reaction equation: $n(\text{BaO}) = n(\text{CO}_2)$.

Then,

$$\frac{m(\text{BaO})}{M(\text{BaO})} = \frac{V(\text{CO}_2)}{V_m}, \text{ where } V_m = 22.4\text{L}; M(\text{BaO}) = 153.34 \text{ g/mol}.$$

$$V(\text{CO}_2) = \frac{m(\text{BaO}) * V_m}{M(\text{BaO})} = \frac{955 * 22.4}{153.34} = 139.507(\text{L}).$$

$$V(\text{CO}_2) = 139.507 \text{ L}.$$

Answer: $V(\text{CO}_2) = 139.507 \text{ L}$.

