

1. Calcium carbonate is decomposed by heating, as shown in the following equation.



- a. what is the theoretical yield of CaO if 24.8 g of CaCO₃ is heated?
b. What is the percent yield if 13.1 g CaO is produced?

Solution:

- a. 13.9 g
b. 94.2 %

2. What is the % yield of H₂O if 58 g H₂O are produced by combining 60 g O₂ and 7.0 g H₂?

Solution:

Balanced equation: $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2 \rightarrow$ Yield = 92.9 %

3. If 300 g of FeS₂ is burned in 200 g of O₂, 143 g Fe₂O₃ results. % yield Fe₂O₃?

Solution:

Balanced equation: $4\text{FeS}_2 + 11\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3 + 8\text{SO}_2 \rightarrow$ Yield = 78.8 %

4. 70 g of MnO₂ + 3.5 mol HCl gives a 42% yield. How many g of Cl₂ is produced?

Solution:

Balanced equation: $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2 \rightarrow$ 24 g of Cl₂