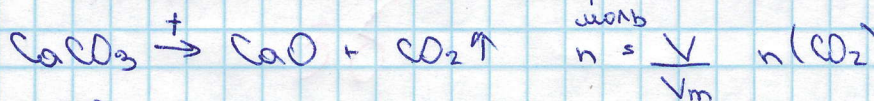


X-11-1

Δano:  $V(\text{CO}_2) = 4.48 \text{ л}$   $m(\text{CaCO}_3) = 41.2 \text{ г}$   
 $+ \text{HCl}$   $m_{\text{p-pa}} = 465.5 \text{ г}$   
 $W(\text{CaCl}_2) = ?$

Решение:  $M(\text{CaO}) = 56 \text{ г/моль}$   $M(\text{CaCO}_3) = 100 \text{ г/моль}$

(270)



$$n(\text{CO}_2) = 0.2 \text{ моль} \quad n(\text{CaO}) = n(\text{CO}_2) = 0.2 \text{ моль}$$

$$m(\text{CaO}) = n(\text{CaO}) \cdot M(\text{CaO}) = 0.2 \cdot 56 = 11.2$$

$$m_{\text{осм}} = m(\text{CaCO}_3) - m(\text{CaO}) = 41.2 - 11.2 = 30$$

$$n_{\text{осм}}(\text{CaCO}_3) = \frac{m_{\text{осм}}}{M(\text{CaCO}_3)} = \frac{30}{100} = \frac{3}{10} = 0.3$$



$$n_{\text{осм}}(\text{CaCO}_3) = n(\text{CO}_2) = 0.3 \text{ моль}$$

$$m(\text{CO}_2) = n(\text{CO}_2) \cdot M(\text{CO}_2) = \quad M(\text{CO}_2) = 44$$

$$= 0.3 \cdot 44 = 13.2 \text{ г}$$

$$M(\text{CaCl}_2) = 111$$

$$n(\text{CaCl}_2) = n_{\text{осм}}(\text{CaCO}_3) + n(\text{CO}_2) = 0.3 + 0.3 = 0.6$$

$$m(\text{CaCl}_2) = n(\text{CaCl}_2) \cdot M(\text{CaCl}_2) =$$

$$= 0.6 \cdot 111 = 66.6 \text{ г}$$

$$W(\text{CaCl}_2) = \frac{m(\text{CaCl}_2)}{m_{\text{p-pa}}} = \frac{66.6}{465.5 + 41.2 - 13.2} =$$

$$= 11.25\%$$

Ответ:  $W(\text{CaCl}_2) = 11.25\%$

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- $3\text{NaHCO}_3 + \text{Al}(\text{NO}_3)_3 = \text{Al}(\text{OH})_3 \downarrow + 3\text{NaNO}_3 + 3\text{CO}_2$
- $2\text{KMnO}_4 + 5\text{H}_2\text{O}_2 + 3\text{H}_2\text{SO}_4 = 2\text{MnSO}_4 + \text{K}_2\text{SO}_4 + 8\text{H}_2\text{O} + 5\text{O}_2$
- $\text{Cr}_2\text{O}_3 + 3\text{NaNO}_3 + 2\text{Na}_2\text{CO}_3 = 2\text{Na}_2\text{CrO}_4 + 3\text{NaNO}_2 + 2\text{CO}_2$
- $\text{NH}_4\text{Cl} + \text{KNO}_2 = \text{KCl} + \text{N}_2 \uparrow + 2\text{H}_2\text{O}$  105

3. Dano:  $m(\text{mem}) = 8 \text{ г}$   $V(\text{возд}) = 4.48 \text{ л (н.у.)}$   
 $D_{\text{H}_2}(\text{возд}) = 35.5$   $\text{что?}$   
 Решение:

$$n = \frac{V}{V_m}$$



$$M(\text{возд}) = D_{\text{H}_2}(\text{возд}) \cdot M(\text{H}_2) \quad M = \frac{m}{n}$$

$$n(\text{KO}_2) = \frac{4.48}{22.4} = 0.2 \text{ моль} \quad M(\text{H}_2) = 2 \text{ г/моль}$$

$$M(\text{KO}_2) = 35.5 \cdot 2 = 71 \text{ г/моль} = \text{Cl} \rightarrow \text{Ca}$$

$$M(\text{Me}) = \frac{m(\text{Me})}{n(\text{Me})} = \frac{8}{0.2} = 40 \text{ г/моль} = \text{Ca}$$

$$m(\text{Me}) = 8 + 0.2 \cdot 71 = 22.2 \text{ г}$$

$$M(\text{CaCl}_2) = \frac{m}{n} = \frac{22.2}{0.2} = 111 \text{ г/моль}$$

$$M(\text{CaCl}_2) = 71 + 40 = 111 \text{ г/моль}$$



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~~4. Dano:  $m(\text{CaCl}_2) = 17.1 \text{ г}$   $V(\text{CO}_2) = 26.88$~~

4.



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