

N1

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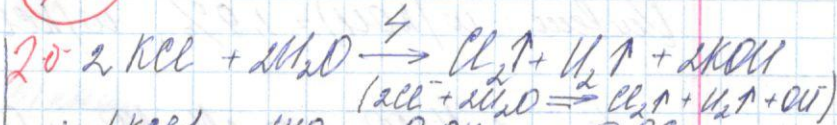
Дано:

$$w(\text{KCl}) = 4\%$$

$$m(\text{KCl}) = 149 \text{ г}$$

$$V(\uparrow \text{воздух}) = 1,12 \text{ л}$$

$$w(\text{Fe} - \text{Fe}) = ?$$



$$m(\text{KCl}) = 149 \text{ г} \cdot 0,04 = 5,96 \text{ г}$$

$$v(\text{KCl}) = \frac{5,96 \text{ г}}{74,5 \text{ г/моль}} = 0,08 \text{ моль} \quad 1 \text{ б.}$$

$$v(\uparrow, \text{Cl}_2 + \text{H}_2) = \frac{V}{V_m} = \frac{1,12 \text{ л}}{22,4 \text{ л/моль}} = 0,05 \text{ моль} \quad 1 \text{ б.}$$

$$v(\text{Cl}_2) = v(\text{H}_2) = \frac{1}{2} v(\text{H}_2 + \text{Cl}_2) = 0,025 \text{ моль} \quad 1 \text{ б.}$$

$$v_{\text{ост}}(\text{KCl}) = 0,08 - 0,05 = 0,03 \text{ моль} \quad 1 \text{ б.}$$

$$v(\text{KOH}) = v(\text{KCl}) = 0,05 \text{ моль}$$

$$m(\text{Fe} - \text{Fe}) = 149 \text{ г} - 1,449 \text{ г} - 0,05 \text{ г} = 147,141 \text{ г} \quad 1 \text{ б.}$$

$$m(\text{Cl}_2) = v \cdot M = 35,5 \text{ г/моль} \cdot 0,025 \text{ моль} = 1,445 \text{ г} \quad 1 \text{ б.}$$

$$m(\text{H}_2) = 0,025 \text{ моль} \cdot 2 \text{ г/моль} = 0,05 \text{ г} \quad 1 \text{ б.}$$

$$v(\text{KOH}) = v(\text{KCl}) = 0,05 \text{ моль}$$

$$m_{\text{ост}}(\text{KOH}) = 0,03 \text{ моль} \cdot (39 \text{ г/моль} + 16 \text{ г/моль} + 1 \text{ г/моль}) = 2,8 \text{ г} \quad 1 \text{ б.}$$

$$w(\text{KOH}) = \frac{2,8 \text{ г}}{147,141 \text{ г}} \cdot 100\% = 1,9\% \quad 1 \text{ б.}$$

$$w(\text{KCl}) = \frac{2,235 \text{ г}}{147,141 \text{ г}} \cdot 100\% = 15,19\% \quad 1 \text{ б.}$$

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$$m(\text{KCl}) = (35,5^2/\text{моль} + 39^2/\text{моль}) \cdot 0,3 \text{ моль} = 22,352$$

Решение: $w(\text{KCl}) = 1,9\%$, $w(\text{KCl}) = 15,19\%$ (175)



$$V(\text{O}_2) = \frac{V}{V_m} = \frac{11,2}{22,4} = 0,5 \text{ моль} \quad 25$$

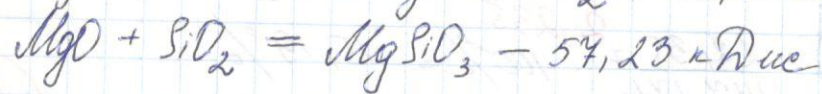
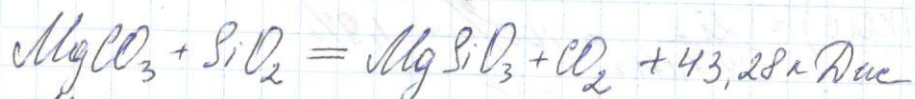
$$V(\text{NaNO}_3) = 2V(\text{O}_2) = 1 \text{ моль}$$

$$m(\text{NaNO}_3) = M \cdot V = 852 = 852$$

$$w(\text{NaNO}_3) = \frac{852}{122,62} \cdot 100\% = 69,3\%$$

$$w(\text{Cu}(\text{NO}_3)_2) = 100\% - 69,3\% = 30,7\%$$

Решение: $w(\text{NaNO}_3) = 69,3\%$; $w(\text{Cu}(\text{NO}_3)_2) = 30,7\%$



$$3x = 3000 \text{ z}$$

$$Q = 43,28 \text{ kJ/mol} - 57,23 \text{ kJ/mol} = 100,51 \text{ kJ/mol}$$

$$\frac{3000 \text{ z}}{84 \text{ g/mol}} = \frac{x}{100,51 \text{ kJ/mol}}$$

$$x = \frac{3000 \cdot 100,51}{84} = 3589 \text{ kJ/mol}$$

или

$$\frac{3000 \text{ z}}{84 \text{ g/mol}} = \frac{x}{43,28 \text{ kJ/mol}}$$

$$x = \frac{3000 \cdot 43,28}{84} = 1545,7 \text{ kJ/mol}$$

58.

5.

$$\rho_{\text{CO}_2} = \rho_{\text{H}_2\text{O}} \cdot \rho_{\text{NO}_2}$$

$$m(\text{CO}_2) = 4,24 \text{ z}$$

$$m(\text{H}_2\text{O}) = ? \quad x$$

$$m(\text{NO}_2) = ? \quad y$$

$$m = 40,19 \text{ z}$$

$$M(\text{C}_2\text{H}_5\text{OH}) = 201,5 \text{ g/mol}$$



$$M(\text{CO}_2) = 44 \text{ g/mol}$$

$$M(\text{H}_2\text{O}) = 18 \text{ g/mol}$$

$$M(\text{NO}_2) = 46 \text{ g/mol}$$

$$44 : 18 : 46 = \text{CO}_2 : \text{H}_2\text{O} : \text{NO}_2$$

$$5 : 1 : 5$$

$$\text{CO}_2 = \text{H}_2\text{O}$$

$$= m(\text{NO}_2) \cdot 10,192 -$$

$$M_{\text{molar}} = 328$$