

Popovněná úloha

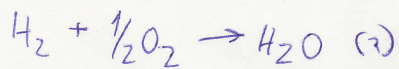
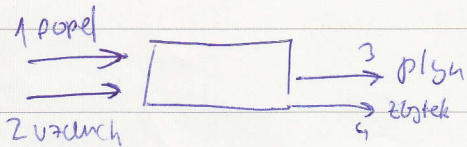
NO.

DATE

42-13

82% C 5% H₂O 2% H₂ 1% O₂ 10% popel

2 kg vzduch → 1 kg uhlí



	①	②	③	④	
A - uhlík	0.82	-	-	-	7+2
B - H ₂ O	0.05	-	WR3	-	7
C H ₂	0.02	-	-	-	1 ε
D O ₂	0.01	0.233	WD3	-	1 praktick P=0.2
E popel	0.10	-	-	↑	
F N ₂	-	0.767	WF3	-	
G CO ₂	-	-	WG3	-	
	1 kg	m ₂	m ₃	m ₄	

Ⓐ $1 \cdot 0.82 + \sum M_A = \xi_1 M_A \rightarrow \xi_1 = \frac{0.82}{12} = 0.0683 \text{ kmol}$

Ⓑ $1 \cdot 0.05 + \xi_2 M_B = W_{B3} m_3$

Ⓒ $1 \cdot 0.02 = \xi_2 M_C \rightarrow \xi_2 = \frac{0.02}{2} = 0.01 \text{ kmol}$

Ⓓ $0.01 \cdot 1 + 0.233 m_2 = m_3 W_{D3} + (\xi_1 + 0.5 \xi_2) M_D$

Ⓔ $0.1 = m_4$

Ⓕ $\xi_1 = m_3 W_{G3}$

$1 + m_2 = m_3 + m_4$

ze zadání není jednoznačně řešeno, ideální možnost je správná

$m_{\text{teoretick}} = \frac{1}{0.233} (\xi_1 + 0.5 \xi_2) M_D = 10.06 \text{ kg teoretick}$

$\Rightarrow 12.08 \text{ kg praktick}$

$m_{\text{teoretick}} = \frac{1}{0.233} [(\xi_1 + 0.5 \xi_2) M_D - 0.01] = 10.02 \text{ kg teoretick} \Rightarrow 12.03 \text{ kg praktick}$