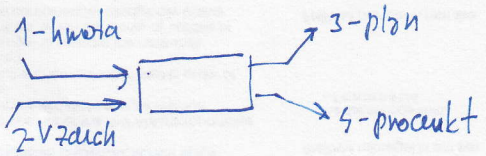
2-17

$$C_6H_{12}O_6 + O_2 + H_2O \rightarrow C_6H_{12}O_7 + H_2O_2$$
$$180{,}16 \quad 32 \quad 18{,}02 \quad 196{,}16 \quad 34{,}01$$



9+1 neznámých
7 bilancí
2× $\Sigma w_i = 1$
1× $0{,}233 \cdot m_2 = 18$ kg/h

	①	②	③	④
A – $C_6H_{12}O_6$	0,02	–	–	–
B – O_2	–	0,233	w_{B3}	–
C – H_2O	0,20	–	–	w_{C4}
D – $C_6H_{12}O_7$	–	–	–	w_{D4}
E – H_2O_2	–	–	–	w_{E4}
F – N_2	–	0,767	w_{F3}	–
G – pevné látky	0,78	–	–	w_{G4}
	3000 kg/h	m_2	m_3	m_4

$3000 \cdot 0{,}02 = \xi \cdot 180{,}16$ $\quad \xi = 0{,}333$ kmol/h

*) → $18 = \xi \cdot 32 + m_3 w_{B3}$

$3000 \cdot 0{,}20 = \xi \cdot 18{,}02 + m_4 w_{C4}$

$\xi \cdot 196{,}16 = w_{D4} \cdot m_4$

$\xi \cdot 34{,}01 = m_4 w_{E4}$

*) → $\frac{0{,}767}{0{,}233} \cdot 18 = m_3 w_{F3}$

$3000 + \frac{18}{0{,}233} = m_3 + m_4$

*) → $w_{B3} + w_{F3} = 1$ $\quad \rightarrow$ *) $\frac{7{,}3528}{m_3} + \frac{59{,}25}{m_3} = 1 \Rightarrow m_3 = 66{,}596$ kg/h (plyn)

$m_4 = 3010{,}7$ kg/h (hmota)

Hmota

$w_{D4} = 0{,}02170$ $(C_6H_{12}O_7)$

$w_{E4} = 0{,}003762$ (H_2O_2)

$w_{C4} = 0{,}1973$ (H_2O)

$w_{G4} = 0{,}7773$ (pevné látky)

Plyn

$w_{F3} = 0{,}8897$ (N_2)

$w_{B3} = 0{,}1103$ (O_2)