IEQB - Resolução de Questões

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3.10)

- $1 = 1\text{i}$
- $3 = 1\text{o}2$
- $4 = 2\text{o}1$
- $x_B = \text{B}$
- $x_X = \text{X}$
- $2 = 1\text{o}1$
- $3 = 2\text{i}$
- $5 = 2\text{o}2$
- $x_T = \text{T}$

- $m_{1i} = 1000\,mol/h$
- $X_{1o1} = 0$
- $B_{2o1} = 0.08$
- $B_{1i} = 0.2$
- $B_{1o2} = 0.025$
- $T_{2o1} = 0.72$
- $T_{1i} = 0.3$
- $T_{1o2} = 0.35$
- $X_{2o1} = 0.2$
- $X_{1i} = 0.5$
- $X_{1o2} = 0.625$
- $B_{2o2} = 0$

$$m_{1o2}\,X_{1o2} = m_{1i}\,X_{1i} \implies m_{1o2} = \frac{1000 * 0.5}{0.625} \cong 800\,mol/h$$

$$m_{1o1} = m_{1i} - m_{1o2} = 200\,mol/h$$

$$m_{2o1}\,B_{2o1} = m_{2i}\,B_{2i} = m_{1o2}\,B_{2o1} \implies m_{2o1} = \frac{800 * 0.025}{0.08} \cong 250\,mol/h$$

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3.11)

- 1 = 1i1
- 4 = 1o2
- 6 = 2o2
- x_C = Glic
- 2 = 1o1
- 4 = 2i
- x_A = Agua
- 3 = 1i2
- 5 = 2o1
- x_B = NaCl
- x_D = Alc

	1i1	1i2	1o1	1o2 / 2i	2o1	2o2
m	1000 kg/h	1000 Kg/h				
Agua	0.20 p/p	0.87 p/p			0.75 p/p	0.05 p/p
Alc	0.98 p/p	-	0.01 p/p		-	0.95 p/p
NaCl	-	0.03 p/p		-	-	-
Glic	-	0.10 p/p	0.01 p/p		0.25 p/p	-

Produção horária de glicerina = $Glic_{2o1}\, m_{2o1}$; $m_{2o1} + m_{2o2} = m_{2i} = m_{1o2}$;
$m_{1o2} + m_{1o1} = m_{1i1} + m_{1i2}$; $m_{2o2}\, Alc_{2o2} + m_{1o1}\, Alc_{1o1} =$
$= m_{1i1}\, Alc_{1i1} + m_{1i2}\, Alc_{1i2}$; $m_{1o1} =?$

m_{2i}