

# IEQB TP - Ficha 4

## Resolução

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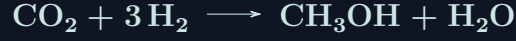
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### Conteúdo

Questão 8

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## Questão 8 Refazer



- 1 = 1i.1                      • 3 = 2i                      • 6 = 2o2.1
- 2 = 1i                      • 4 = 2o1                      • 7 = 2o2.2
- 3 = 1o                      • 5 = 2o2                      • 7 = 1i.2

K mol/h	1i	1i.1	1o 2i	2o1	2o2	2o2.1	2o2.2	1i.2
CO <sub>2</sub>	28		14	-	14	2.9	32	%
H <sub>2</sub>	70		28	-	28	5.8	22	
Inertes	2	0.40 %	2	-	2	0.41	3.6	
CH <sub>3</sub> OH	-	-	14	14	-	-	-	
H <sub>2</sub> O	-	-	14	14	-	-	-	
Total	100	65	72	28	44	9.0	35	

$$\frac{40 \text{ mol}_{\text{H}_2 1o}}{100 \text{ mol}_{\text{H}_2 1i}} 70\% \text{ mol}_{\text{H}_2 1i} \cong 28\% \text{ mol}_{\text{H}_2 1o}$$

$$28\% \text{ mol}_{\text{CO}_2 1i} - \frac{1 \text{ mol}_{\text{CO}_2 1i}}{3 \text{ mol}_{\text{H}_2 1i}} \frac{60 \text{ mol}_{\text{H}_2 1i}}{100 \text{ mol}_{\text{H}_2 1i}} 70\% \text{ mol}_{\text{H}_2 1i} \cong 14\% \text{ mol}_{\text{CO}_2 1o}$$

$$\frac{60 \text{ mol}_{\text{CH}_3\text{OH} 1o}}{100 \text{ mol}_{\text{CH}_3\text{OH} 1o}} \frac{1 \text{ mol}_{\text{CH}_3\text{OH} 1o}}{3 \text{ mol}_{\text{H}_2 1i}} 70 \text{ mol}_{\text{H}_2 1i} \cong 14\% \text{ mol}_{\text{CH}_3\text{OH} 1o}$$

$$\frac{1 \text{ mol}_{\text{H}_2\text{O} 1o}}{1 \text{ mol}_{\text{CH}_3\text{OH} 1o}} 14 \text{ mol}_{\text{CH}_3\text{OH} 1o} \cong 14 \text{ mol}_{\text{H}_2\text{O} 1o}$$

$$M_{\text{Total } 1i.2} + M_{\text{Total } 1i.1} = 100 \text{ mol}_{\text{Total } 1i};$$

$$M_{\text{Total } 1i.2} \frac{5 \text{ mol}_{\text{Iner } 1i.2}}{100 \text{ mol}_{\text{Total } 1i.2}} + M_{\text{Total } 1i.1} \frac{0.40 \text{ mol}_{\text{Iner } 1i.1}}{100 \text{ mol}_{\text{Total } 1i.1}} = 100 \frac{2 \text{ mol}_{\text{Iner } 1i}}{100 \text{ mol}_{\text{Total } 1i}} \implies$$

$$\implies M_{\text{Total } 1i.2} = \frac{200 - 100 * 0.40}{4.6} \cong 35 \text{ mol}_{\text{Total } 1i.2};$$

$$M_{\text{Total } 1i.1} \cong 100 - 35 = 65 \text{ mol}_{\text{Total } 1i.1}$$

$$M_{\text{Total } 2o2.1} = M_{\text{Total } 2o2} - M_{\text{Total } 2o2.2} \cong 44 - 35 = 9 \text{ mol}_{\text{Total } 2o2.1}$$