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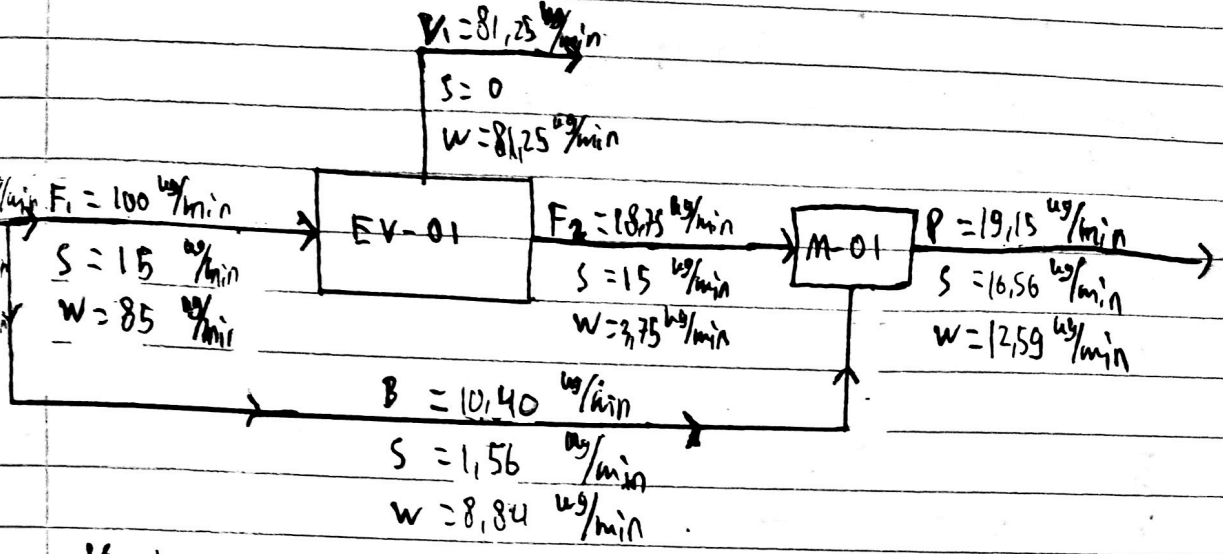
No.
Date:

Latihan 2



Kandungan gula dan padatan tidak berubah saat evaporasi, $S_{F_1} = S_{F_2}$

$B = F_0 = F_1$ = aus 15% wt, $F_0 = F_1 + B$

F_2 = aus 80% wt

P = aus 60% wt

(Step 1) **NIM EV-01**

$S_{F_1} = 15\% \cdot 100$

$\boxed{S_{F_1} = 15 \text{ kg/min}}$

$W_{F_1} = 100 - 15$

$\boxed{W_{F_1} = 85 \text{ kg/min}}$

$S_{F_2} = 0{,}8 \cdot F_2$

$15 = 0{,}8 \cdot F_2$

$\boxed{F_2 = 18{,}75 \text{ kg/min}}$

$W_{F_2} = 18{,}75 - 15$

$\boxed{W_{F_2} = 3{,}75 \text{ kg/min}}$

$W_{F_1} - W_{F_2} - W_{V_1} = 0$

$85 - 3{,}75 - W_{V_1} = 0$

$\boxed{W_{V_1} = 81{,}25 \text{ kg/min}}$

(Step 2)

$P = F_2 + B$

$C_P = 0{,}6$

$C_{F_2} = 0{,}8$ } konsentrasi

$C_B = 0{,}15$

(Step 4)

$C_P = \frac{S_{F_2} + S_B}{W_{F_2} + W_B}$

$C_P = \frac{S_{F_2} + S_B}{W_{F_2} + \frac{17}{3} S_B}$

$0{,}6 = \frac{15 + S_B}{18{,}75 + \frac{17}{3} S_B}$

$11{,}25 + 3{,}4\, S_B = 15 + S_B$

$2{,}4\, S_B = 3{,}75$

$\boxed{S_B = 1{,}56 \text{ kg/min}}$

(Step 3)

$S_B = \frac{15}{100} B$

$W_B = \frac{85}{100} B$

$W_B = \frac{85}{100} \cdot \frac{100}{15} S_B$

$W_B = \frac{17}{3} S_B = 5{,}67\, S_B$

(Step 5)

$S_B = \frac{15}{100} B$

$1{,}56 = \frac{15}{100} B$

$\boxed{B = 10{,}4 \text{ kg/min}}$

$W_B = B - S_B$

$= 10{,}4 - 1{,}56$

$\boxed{W_B = 8{,}84 \text{ kg/min}}$

(Step 6)

$\boxed{F_0 = F_1 + B = 110{,}4 \text{ kg/min}}$

$\boxed{S_{F_0} = S_{F_1} + S_B = 16{,}56 \text{ kg/min}}$

$\boxed{W_{F_0} = W_{F_1} + W_B = 93{,}84 \text{ kg/min}}$

(Step 7) $P = F_2 + B = 18{,}75 + 10{,}40 = 29{,}15 \text{ kg/min}$

$S_P = S_{F_2} + S_B = 15 + 1{,}56 = 16{,}56 \text{ kg/min}$

$W_P = W_{F_2} + W_B = 3{,}75 + 8{,}84 = 12{,}59 \text{ kg/min}$

Date

Stream	Total (kg/min)	Komponen (kg/min)	
		Sweets	Water
F_0	102,6	16,56	93,84
F_1	100	15	85
F_2	18,75	15	3,75
P	19,15	16,56	12,59
B	10,4	1,56	8,84
V_1	81,25	—	81,25