

## BAB V

### NERACA MASSA

Kapasitas produksi : 1000 ton per tahun

Basis perhitungan : 1 jam operasi

Waktu kerja pertahun : 330 hari

Satuan Operasi : 126, 26 kg/jam

#### 5.1. Neraca Massa Total

Tabel 5. 1 Neraca Massa total

Komponen	Input	Output
MgCl <sub>2</sub>	-	124,899
HCl	101,561	5,585
Mg(OH) <sub>2</sub>	80,692	4,438
SiO <sub>2</sub>	2,548	2,548
CaO	0,849	0,849
Fe <sub>2</sub> O <sub>3</sub>	0,339	0,339
H <sub>2</sub> O	914,566	961,891
Total	1100,55	1100,54

#### 5.2. Mixer

Tabel 5. 2 Neraca Massa Mixer

Komponen	Input		Output
	Arus 2	Arus 3	Arus 4
HCL	101,561	-	101,561
H <sub>2</sub> O	172,928	741,122	914,051
Sub Total	274,489	741,122	1015,612
Total	1015,611		1015,612

### 5.3. Reaktor (R-201)

Tabel 5. 3 Neraca Massa pada Reaktor

Komponen	Input		Output
	Arus1	Arus 4	Arus 5
MgCl <sub>2</sub>	-	-	124,899
HCl	-	101,561	5,585
Mg(OH) <sub>2</sub>	80,692	-	4,438
SiO <sub>2</sub>	2,548	-	2,548
CaO	0,849	-	0,849
Fe <sub>2</sub> O <sub>3</sub>	0,339	-	0,339
H <sub>2</sub> O	0,509	9140,5156	961,891
<b>Sub Total</b>	<b>84,939</b>	<b>1015,612</b>	<b>1100,552</b>
<b>Total</b>	<b>1100,551</b>		<b>1100,551</b>

### 5.4 Centrifuge

Tabel 5. 4 Neraca Massa pada Centrifuge

Komponen	Input	Output	
	Arus 5	Arus 6	Arus 7
MgCl <sub>2</sub>	124,8995	2,4979	122,4015
HCL	5,5858	0,1117	5,4741
Mg(OH) <sub>2</sub>	4,4380	4,4380	-
SiO <sub>2</sub>	2,5481	2,5481	-
CaO	0,8494	0,8494	-
Fe <sub>2</sub> O <sub>3</sub>	0,3397	0,3397	-
H <sub>2</sub> O	961,8915	19,2378	942,6537
<b>Sub Total</b>	<b>1100,552</b>	<b>30,0226</b>	<b>1070,5293</b>
<b>Jumlah</b>	<b>1100,552</b>	<b>1100,551</b>	

### 5.5. Evaporator I dan II

Tabel 5. 5 Neraca Massa pada Evaporator I dan II

Komponen	Input	Output		Output ke 2	
	Arus 7	Arus 8	Arus 9	Arus 10	Arus 11
MgCl <sub>2</sub>	122,4015	0	122,4015	0	122,4015
HCL	5,4741	5,4741	0	0	0
H <sub>2</sub> O	942,6537	791,8291	150,8245	126,6926	24,1319
Sub Total	1070,5293	797,3032	273,226	126,6926	146,5334
Total	1070,5293	1070,5283		273,226	

### 5.6. Rotary Dryer

Tabel 5. 6 Neraca Massa pada Rotary Dryer

Komponen	Input	Output	
	Arus 11	Arus 12	Arus 13
MgCl <sub>2</sub>	122,4015	0	122,4015
H <sub>2</sub> O	24,1319	20,2708	3,8611
Sub Total	146,5334	20,2708	126,2626
Total	146,5334	146,5334	

