

BAB V
NERACA PANAS

Kapasitas Produksi	: 85.000 Ton/Tahun
Operasi Pabrik	: 300 Hari/Tahun
Satuan	: Kilo Joule (kJ)
Temperatur Referensi	: 25°C
Bahan baku	: Serat Kelapa Sawit (SKS)
Produk	: Karbon Aktif

5.1. Rotary Dryer (RD-01)

Komponen	Input (Kj/Jam)	Output (Kj/Jam)
Q1	24.050.770,7981	
Q3		53.056.042,9608
Q2		175,1937
Qsteam in	47.418.970,3030	
Qsteam out		18.413.522,9467
Total	71.469.741,1011	71.469.741,1011

5.2. Rotary Kiln (RK-01) Reaktor Carbonizer

Komponen	Input (kJ/jam)	Output (kJ/jam)
Q3	53.056.042,9608	-
Q5		5.406.262,0080
Q4		17.225.907,9699
Qreaksi		-162.346.678,5892
Qsteam in	502.086.645,7780	
Qsteam out		309.316.094,2059
Q loss		385.541.103,1442
Total	555.142.688,7387	555.142.688,7387

5.3. *Cooling Screw Conveyor (Cs-01)*

Komponen	Input (Kj/jam)	Output(Kj/jam)
Q5	5.406.262,0080	
Q6		282.847,1009
Qc in	1.280.853,7268	
Qc out		6.404.268,6339
Total	6.687.115,7348	6.687.115,7348

5.4. *Mixer (M-01) Aktivasi Kimia*

Komponen	Input (Kj/jam)	Output (Kj/jam)
Q6	282.847,1009	
QHCl	645.689,0277	
Q7		928.536,1286
Total	928.536,1286	928.536,1286

5.5. *Filter (F-01)*

Komponen	Input (Kj/jam)	Output (Kj/jam)
Q7	928.536,1286	
Q9		80.960,0797
QHCl		847.576,0489
Total	928.536,1286	928.536,1286

5.6. *Washer (W-02)*

Komponen	Input (Kj/jam)	Output (Kj/jam)
Q9	80.960,0797	
Q10	252.482,4473	
Q12		61.757,9063
Q11		271.684,6208
Total	333.442,5270	333.442,5270

5.7. Rotary Dryer (RD-02)

Komponen	Input (Kj/jam)	Output(Kj/jam)
Q12	61.757,9063	
Q14		1.126.529,1988
Q13		49,4998
Qsteam in	2.083.519,5461	
Qsteam out		1.018.698,7537
Total	2.145.277,4524	2.145.277,4524

5.8. Rotary Kiln (RK-02) Aktivasi Fisika

Komponen	Input (Kj/jam)	Output(Kj/jam)
Q14	1.126.529,1988	
Qsteam	17.089.850,4335	
Q15		18.216.379,6323
Total	18.216.379,6323	18.216.379,6323

5.9. Cooling Screw Conveyor (Cs-02)

Komponen	Input(Kj/jam)	Output(Kj/jam)
Q15	18.216.379,6323	-
Q16		6.548.943,7776
Qcw in	2.916.858,9637	
Q cw out		14.584.294,8183
Total	21.133.238,5959	21.133.238,5959

5.10. Cooling Screw Conveyor (Cs-03)

Komponen	Input(Kj/jam)	Output(Kj/jam)
Q16	6.548.943,7776	-
Q17		54.690,5106
Qcw in	16.623.563,3168	
Q cw out		8.117.816,5838
Total	8.172.507,0944	8.172.507,0944