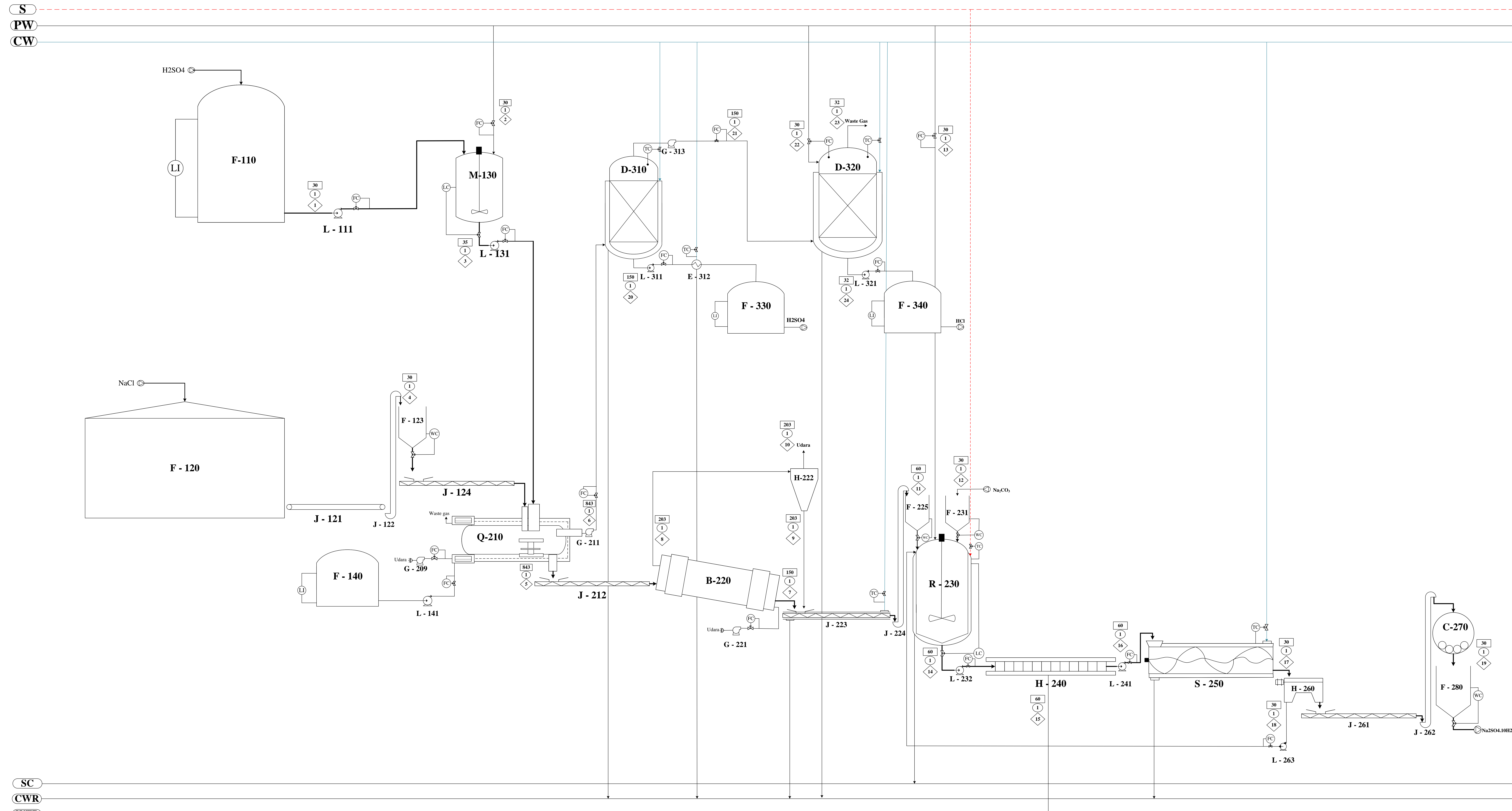


FLOWSHEET PABRIK SODIUM SULFATE DECAHYDRATE DARI NaCl DAN H2SO4 DENGAN PROSES MANNHEIM



SC
CWR
WTP

Komponen	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
NaCl _(s)				21353,48	427,07		422,80							971,127	19,42													
NaCl _(aq)								4,2707	4,23	0,043	422,799					951,704	951,704	904,119	47,59									
CaSO _{4(aq)}								22,07	0,2229	0,22	0,002	22,0667																
CaSO _{4(s)}				22,29	22,29																							
H ₂ O _(l)	388,32	5082,05	5470,37	847,01									33,885	34016,58	680,33	33336,2	1506,40	1431,08	75,32				21428,00			26.358,10		
H ₂ O _(g)																												
H ₂ SO _{4(l)}	19027,47		19027,47																									
Na ₂ SO _{4(s)}																												
Na ₂ SO _{4(aq)}					25397,87		25143,89	253,98	251,44	2,54	25143,89			25509,2		24999	140,93	133,89	7,04668									
MgSO _{4(s)}				66,87	66,87		66,20																					
MgSO _{4(aq)}								0,67	0,66	0,007	66,20																	
HCl _(aq)																										12.403,82		
HCl _(g)																												
SO _{3(g)}																												
Na ₂ CO _{3(s)}																												
MgCO _{3(s)}																												
CaCO _{3(s)}																												
Na ₂ SO _{4.10H₂O_(s)}																												
Total	19415,79	5082,05	24497,84	22289,65	25914,09	20873,39	25654,95	259,1	256,55	2,59	25654,95	76,43	33885,38	60560,11	1273,13	59287	59286,98	2469,08	56687,9		56687,95				19374,02	21428,00	2039,83	38761,92

TEKNIK KIMIA FAKULTAS TEKNIK UNIVERSITAS PEMBANGUNAN NASIONAL 2023		
PRA RENCANA PABRIK SODIUM SULFATE DECAHYDRATE DARI SODIUM CHLORIDE DAN SULFURIC ACID DENGAN PROSES MANNHEIM FURNACE		
KETERANGAN		
UTILITY		
S	: Steam	
SC	: Steam Condensate	
CW	: Cooling Water	
CWR	: Cooling Water Return	
PW	: Process Water	
WTP	: Waste Treatment Process	
MAIN EQUIPMENT		
NO	KODE	NAMA ALAT
1	F - 110	STORAGE H2SO4
2	L-111	POMPA - 1
3	F - 120	STORAGE NaCl
4	J-121	BELT CONVEYOR
5	J-122	BUCKET ELEVATOR - 1
6	F - 123	HOPPER - 1
7	J - 124	SCREW CONVEYOR -1
8	M - 130	TANGKI PENGECER H2SO4
9	L - 131	POMPA - 2
10	F - 140	TANGKI PENYIMPANAN FUEL OIL
11	L - 141	POMPA - 3
12	G - 209	BLOWER - 1
13	Q - 210	FURNACE MANNHEIM
14	G - 211	BLOWER - 2
15	J-212	SCREW CONVEYOR - 2
16	B - 220	ROTARY COOLER
17	G - 221	BLOWER - 3
18	H - 222	CYCLONE - 1
19	J - 223	COOLING SCREW CONVEYOR
20	J - 224	BUCKET ELEVATOR - 2
21	F - 225	HOPPER - 2
22	R - 230	SOLUTION TANK
23	F - 231	HOPPER - 3
24	L - 232	POMPA - 4
25	H - 240	FILTER PRESS
26	L - 241	POMPA - 5
27	S - 250	CRYSTALLIZER
28	H - 260	CENTRIFUGE
29	J - 261	SCREW CONVEYOR - 3
30	J - 262	BUCKET ELEVATOR - 3
31	L - 263	POMPA - 6
32	C - 270	BALL MILL
33	F - 280	TANGKI PRODUK Na2SO4.10H2O
34	D - 310	COKE TOWER
35	L - 311	POMPA - 7
36	E - 312	COOLER
37	G - 313	BLOWER - 4
38	D - 320	ABSORBER
39	L - 321	POMPA - 8
40	F - 330	TANGKI PENAMPUNG H2SO4
41	F - 340	TANGKI PENAMPUNG HCl
LINE AND SYMBOL		
PC	PRESSURE CONTROL	
TC	TEMPERATURE CONTROL	
LI	LEVEL INDICATOR	
WC	WEIGHT CONTROL	
FC	FLOW CONTROL	
MATERIAL FLOW		
—	TEMPERATURE (°C)	
◇	ALIRAN MASSA (Kg/jam)	
○	PRESSURE (atm)	
Digambar Oleh :		
Bagus Ibnu H.R	19031010035	
Dosen Pembimbing : Ir. Isni Utami, M.T		TTD :
FLOWSHEET PABRIK SODIUM SULFATE DECAHYDRATE DARI SODIUM CHLORIDE DAN SULFURIC ACID DENGAN PROSES MANHEIM		
PROGRAM STUDI TEKNIK KIMIA FAKULTAS TEKNIK UNIVERSITAS PEMBANGUNAN NASIONAL "VETERAN" JAWA TIMUR 2023		