

## APPENDIX A

### Model of Midrex iron and steel plant

#### STREAM PROPERTIES

Stream No.	1	2	3	4
Name	CH4 reforme			
- - Overall - -				
Molar flow kmol/h	8.1451	47.2962	47.2962	63.4948
Mass flow kg/h	130.6718	1252.6890	1252.6890	1252.7109
Temp C	<b>20.0000</b>	101.5317	580.0000	950.0000
Pres bar	<b>5.0000</b>	5.0000	5.0000	5.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-611.81	-9893.6	-8957.9	-5953.8
Entropy MJ/K/h	-0.7712	0.06644	1.645	4.650
Average mol wt	16.0430	26.4861	26.4861	19.7294
Flow rates in kg/h				
Hydrogen	0.0000	13.0667	13.0667	42.7925
Methane	130.6718	130.6866	130.6866	0.7547
Water	0.0000	138.2736	138.2736	164.4191
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	0.0000	0.0000	0.0000
Carbon oxide	0.0000	226.2841	226.2841	720.6469
Carbon Dioxide	0.0000	744.3779	744.3779	324.0977
Oxygen	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	0.0000	0.0000	0.0000	0.0000
Silicon Dioxide	0.0000	0.0000	0.0000	0.0000
Iron	0.0000	0.0000	0.0000	0.0000
Component mole %				
Hydrogen	0.000000	13.705429	13.705429	33.433548
Methane	100.000000	17.223431	17.223431	0.074088
Water	0.000000	16.228528	16.228528	14.374080
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	17.081070	17.081070	40.520191
Carbon Dioxide	0.000000	35.761544	35.761544	11.598098
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000
Stream No.	5	6	7	8
Name		Mineral Fe	CH4+O2	
- - Overall - -				
Molar flow kmol/h	63.4948	10.1271	5.0112	78.6331
Mass flow kg/h	1252.7109	1489.6166	133.7000	2876.0276
Temp C	900.0000	<b>20.0000</b>	<b>20.0000</b>	554.3430
Pres bar	5.0000	<b>5.0000</b>	<b>5.0000</b>	5.0000
Vapor mole fraction	1.000	0.0000	1.000	1.000
Enth MJ/h	-6071.6	-7742.4	-126.09	-13940.
Entropy MJ/K/h	4.552	-2.487	-0.1780	2.719
Average mol wt	19.7294	147.0915	26.6803	36.5753

Flow rates in kg/h				
Hydrogen	42.7925	0.0000	0.0000	42.7925
Methane	0.7547	0.0000	26.7981	27.5528
Water	164.4191	0.0000	0.0000	164.4191
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	25.6562	0.0000	25.6562
Carbon oxide	720.6469	0.0000	0.0000	720.6469
Carbon Dioxide	324.0977	0.0000	0.0000	324.0977
Oxygen	0.0000	0.0000	106.9019	106.9019
Nitrogen	0.0000	0.0000	0.0000	0.0000
Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	1429.7791	0.0000	1429.7791
Magnesium Oxide	0.0000	18.0428	0.0000	18.0428
Silicon Dioxide	0.0000	16.1386	0.0000	16.1386
Iron	0.0000	0.0000	0.0000	0.0000

Component mole %				
Hydrogen	33.433548	0.000000	0.000000	26.996973
Methane	0.074088	0.000000	33.333319	2.184113
Water	14.374080	0.000000	0.000000	11.606804
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	4.517728	0.000000	0.581837
Carbon oxide	40.520191	0.000000	0.000000	32.719305
Carbon Dioxide	11.598098	0.000000	0.000000	9.365250
Oxygen	0.000000	0.000000	66.666681	4.248578
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	88.409501	0.000000	11.386243
Magnesium Oxide	0.000000	4.420480	0.000000	0.569313
Silicon Dioxide	0.000000	2.652285	0.000000	0.341587
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	9	10	11	12
Name			C to 2.2%	DRI 2.2%C
- - Overall - -				
Molar flow kmol/h	87.6780	19.0805	0.5000	19.5805
Mass flow kg/h	2876.0000	1059.8380	6.0055	1065.8433
Temp C	900.3167	700.0000	<b>20.0000</b>	691.4480
Pres bar	5.0000	4.0000	<b>1.0000</b>	1.0000
Vapor mole fraction	1.000	0.0000	0.0000	0.0000
Enth MJ/h	-13940.	49.652	-0.020736	49.632
Entropy MJ/K/h	4.050	0.6695	-7.013E-005	0.6728
Average mol wt	32.8018	55.5456	12.0110	54.4339

Flow rates in kg/h				
Hydrogen	18.1987	0.0000	0.0000	0.0000
Methane	0.0206	0.0000	0.0000	0.0000
Water	446.0439	0.0000	0.0000	0.0000
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	25.6562	25.6562	0.0000	25.6562
Carbon oxide	315.1589	0.0000	0.0000	0.0000
Carbon Dioxide	1036.7380	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Carbon	0.0000	0.0000	6.0055	6.0055
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	18.0428	18.0428	0.0000	18.0428
Silicon Dioxide	16.1386	16.1386	0.0000	16.1386
Iron	1000.0000	1000.0000	0.0000	1000.0000

Component mole %				
Hydrogen	10.296834	0.000000	0.000000	0.000000

Methane	0.001467	0.000000	0.000000	0.000000
Water	28.239238	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.521815	2.397825	0.000000	2.336594
Carbon oxide	12.832938	0.000000	0.000000	0.000000
Carbon Dioxide	26.867503	0.000000	0.000000	0.000000
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	100.000000	2.553561
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.510583	2.346210	0.000000	2.286298
Silicon Dioxide	0.306349	1.407725	0.000000	1.371778
Iron	20.423274	93.848240	0.000000	91.451764

Stream No.	13	14	15	16
Name	12kg/tls C			Steel Liquid
- - Overall - -				
Molar flow kmol/h	2.4991	22.0796	20.5856	19.0805
Mass flow kg/h	59.9985	1125.8417	1125.8417	1059.8379
Temp C	<b>20.0000</b>	631.3620	1600.0000	1600.0000
Pres bar	<b>1.0000</b>	1.0000	1.0000	1.0000
Vapor mole fraction	1.000	1.000	1.000	0.0000
Enth MJ/h	-0.27418	49.358	312.00	773.20
Entropy MJ/K/h	-0.0007557	0.7001	1.326	1.183
Average mol wt	24.0082	50.9902	54.6906	55.5456

Flow rates in kg/h				
Hydrogen	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Water	0.0000	0.0000	0.0000	0.0000
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	25.6562	25.6562	25.6562
Carbon oxide	0.0000	0.0000	0.2884	0.0000
Carbon Dioxide	0.0000	0.0000	65.5215	0.0000
Oxygen	47.9985	47.9985	0.1941	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Carbon	12.0000	18.0055	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	0.0000	18.0428	18.0428	18.0428
Silicon Dioxide	0.0000	16.1386	16.1386	16.1386
Iron	0.0000	1000.0000	1000.0000	1000.0000

Component mole %				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.000000	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	2.072126	2.222503	2.397824
Carbon oxide	0.000000	0.000000	0.050022	0.000000
Carbon Dioxide	0.000000	0.000000	7.232160	0.000000
Oxygen	60.021985	6.793608	0.029459	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	39.978009	6.789459	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	2.027523	2.174664	2.346211
Silicon Dioxide	0.000000	1.216513	1.304798	1.407726
Iron	0.000000	81.100774	86.986393	93.848234

Stream No.	17	18	19	20
Name	Offgas			
- - Overall - -				
Molar flow kmol/h	1.5051	68.5975	68.5975	43.8379

Mass flow	kg/h	66.0040	1816.1603	1816.1603	1370.1165
Temp	C	1600.0000	900.3167	80.0000	80.0000
Pres	bar	1.0000	4.0000	4.0000	4.0000
Vapor mole fraction		1.000	1.000	0.7135	1.000
Enth	MJ/h	-461.20	-14124.	-17200.	-10434.
Entropy	MJ/K/h	0.1435	3.382	-1.918	1.193
Average mol wt		43.8521	26.4756	26.4756	31.2542

Flow rates in kg/h					
Hydrogen		0.0000	18.1987	18.1987	18.1987
Methane		0.0000	0.0206	0.0206	0.0206
Water		0.0000	446.0439	446.0439	0.0000
CalciumCarbonate		0.0000	0.0000	0.0000	0.0000
Calcium Oxide		0.0000	0.0000	0.0000	0.0000
Carbon oxide		0.2884	315.1589	315.1589	315.1589
Carbon Dioxide		65.5215	1036.7380	1036.7380	1036.7380
Oxygen		0.1941	0.0000	0.0000	0.0000
Nitrogen		0.0000	0.0000	0.0000	0.0000
Carbon		0.0000	0.0000	0.0000	0.0000
Ferric Oxide		0.0000	0.0000	0.0000	0.0000
Magnesium Oxide		0.0000	0.0000	0.0000	0.0000
Silicon Dioxide		0.0000	0.0000	0.0000	0.0000
Iron		0.0000	0.0000	0.0000	0.0000

Component mole %					
Hydrogen		0.000000	13.160916	13.160916	20.594186
Methane		0.000000	0.001875	0.001875	0.002934
Water		0.000000	36.094031	36.094031	0.000000
CalciumCarbonate		0.000000	0.000000	0.000000	0.000000
Calcium Oxide		0.000000	0.000000	0.000000	0.000000
Carbon oxide		0.684146	16.402441	16.402441	25.666523
Carbon Dioxide		98.912948	34.340742	34.340742	53.736359
Oxygen		0.402909	0.000000	0.000000	0.000000
Nitrogen		0.000000	0.000000	0.000000	0.000000
Carbon		0.000000	0.000000	0.000000	0.000000
Ferric Oxide		0.000000	0.000000	0.000000	0.000000
Magnesium Oxide		0.000000	0.000000	0.000000	0.000000
Silicon Dioxide		0.000000	0.000000	0.000000	0.000000
Iron		0.000000	0.000000	0.000000	0.000000

Stream No.		21	22	23	24
Name					
- - Overall - -					
Molar flow	kmol/h	31.4756	39.1511	39.1511	39.1511
Mass flow	kg/h	983.7435	1122.0172	1122.0172	1122.0172
Temp	C	80.0000	54.1488	95.5695	119.5056
Pres	bar	4.0000	4.0000	4.0000	5.0000
Vapor mole fraction		1.000	0.8299	1.000	1.000
Enth	MJ/h	-7491.4	-9654.9	-9314.8	-9281.8
Entropy	MJ/K/h	0.8565	-0.2901	0.6341	0.6485
Average mol wt		31.2542	28.6587	28.6587	28.6587

Flow rates in kg/h					
Hydrogen		13.0667	13.0667	13.0667	13.0667
Methane		0.0148	0.0148	0.0148	0.0148
Water		0.0000	138.2736	138.2736	138.2736
CalciumCarbonate		0.0000	0.0000	0.0000	0.0000
Calcium Oxide		0.0000	0.0000	0.0000	0.0000
Carbon oxide		226.2841	226.2841	226.2841	226.2841
Carbon Dioxide		744.3779	744.3779	744.3779	744.3779
Oxygen		0.0000	0.0000	0.0000	0.0000
Nitrogen		0.0000	0.0000	0.0000	0.0000

Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	0.0000	0.0000	0.0000	0.0000
Silicon Dioxide	0.0000	0.0000	0.0000	0.0000
Iron	0.0000	0.0000	0.0000	0.0000

Component mole %

Hydrogen	20.594184	16.556746	16.556746	16.556746
Methane	0.002934	0.002359	0.002359	0.002359
Water	0.000000	19.604756	19.604756	19.604756
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	25.666523	20.634662	20.634662	20.634662
Carbon Dioxide	53.736359	43.201473	43.201473	43.201473
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	25	26	27	28
Name			H2O to refo	
- - Overall - -				
Molar flow kmol/h	24.7596	17.0841	7.6755	12.3623
Mass flow kg/h	446.0439	307.7703	138.2736	386.3728
Temp C	80.0000	80.0000	80.0000	80.0000
Pres bar	4.0000	4.0000	4.0000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	1.000
Enth MJ/h	-6979.0	-4815.5	-2163.5	-2942.3
Entropy MJ/K/h	-3.718	-2.566	-1.153	0.3364
Average mol wt	18.0150	18.0150	18.0150	31.2542

Flow rates in kg/h

Hydrogen	0.0000	0.0000	0.0000	5.1320
Methane	0.0000	0.0000	0.0000	0.0058
Water	446.0439	307.7703	138.2736	0.0000
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	0.0000	0.0000	0.0000
Carbon oxide	0.0000	0.0000	0.0000	88.8748
Carbon Dioxide	0.0000	0.0000	0.0000	292.3601
Oxygen	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	0.0000	0.0000	0.0000	0.0000
Silicon Dioxide	0.0000	0.0000	0.0000	0.0000
Iron	0.0000	0.0000	0.0000	0.0000

Component mole %

Hydrogen	0.000000	0.000000	0.000000	20.594189
Methane	0.000000	0.000000	0.000000	0.002934
Water	100.000000	100.000000	100.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.000000	0.000000	25.666523
Carbon Dioxide	0.000000	0.000000	0.000000	53.736359
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000

Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	29	30	31	32
Name	Comb CH4	Comb Air		
- - Overall - -				
Molar flow kmol/h	3.6000	54.4100	54.4100	54.4100
Mass flow kg/h	57.7548	1569.7747	1569.7747	1569.7747
Temp C	<b>20.0000</b>	<b>20.0000</b>	96.9996	570.5525
Pres bar	<b>2.0000</b>	<b>1.0000</b>	2.0000	2.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-270.22	-8.3101	114.16	904.05
Entropy MJ/K/h	-0.3130	0.2106	0.2678	1.633
Average mol wt	16.0430	28.8508	28.8508	28.8508

Flow rates in kg/h				
Hydrogen	0.0000	0.0000	0.0000	0.0000
Methane	57.7548	0.0000	0.0000	0.0000
Water	0.0000	0.0000	0.0000	0.0000
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	0.0000	0.0000	0.0000
Carbon oxide	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	365.6238	365.6238	365.6238
Nitrogen	0.0000	1204.1510	1204.1510	1204.1510
Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	0.0000	0.0000	0.0000	0.0000
Silicon Dioxide	0.0000	0.0000	0.0000	0.0000
Iron	0.0000	0.0000	0.0000	0.0000

Component mole %				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	100.000000	0.000000	0.000000	0.000000
Water	0.000000	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.000000	0.000000	0.000000	0.000000
Oxygen	0.000000	20.999999	20.999999	20.999999
Nitrogen	0.000000	79.000002	79.000002	79.000002
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	33	34	35	36
Name				
- - Overall - -				
Molar flow kmol/h	70.3723	67.5128	67.5131	67.5131
Mass flow kg/h	2013.9023	2013.8997	2013.9133	2013.9133
Temp C	433.6212	950.0000	590.5525	260.5632
Pres bar	2.0000	2.0000	2.0000	2.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-2308.5	-5394.6	-6330.4	-7120.3
Entropy MJ/K/h	2.273	3.021	2.118	0.9723
Average mol wt	28.6178	29.8299	29.8300	29.8300

Flow rates in kg/h				
Hydrogen	5.1320	0.0000	0.0000	0.0000

Methane	57.7606	0.0000	0.0000	0.0000
Water	0.0000	175.5856	175.5844	175.5844
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	0.0000	0.0000	0.0000
Carbon oxide	88.8748	0.0001	0.0001	0.0001
Carbon Dioxide	292.3601	590.4543	590.4695	590.4695
Oxygen	365.6238	43.7086	43.7086	43.7086
Nitrogen	1204.1509	1204.1510	1204.1510	1204.1510
Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	0.0000	0.0000
Magnesium Oxide	0.0000	0.0000	0.0000	0.0000
Silicon Dioxide	0.0000	0.0000	0.0000	0.0000
Iron	0.0000	0.0000	0.0000	0.0000

Component mole %				
Hydrogen	3.617775	0.000001	0.000001	0.000001
Methane	5.116167	0.000000	0.000000	0.000000
Water	0.000000	14.436714	14.436553	14.436553
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	4.508831	0.000003	0.000003	0.000003
Carbon Dioxide	9.439852	19.872320	19.872750	19.872750
Oxygen	16.236648	2.023223	2.023214	2.023214
Nitrogen	61.080718	63.667738	63.667476	63.667476
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

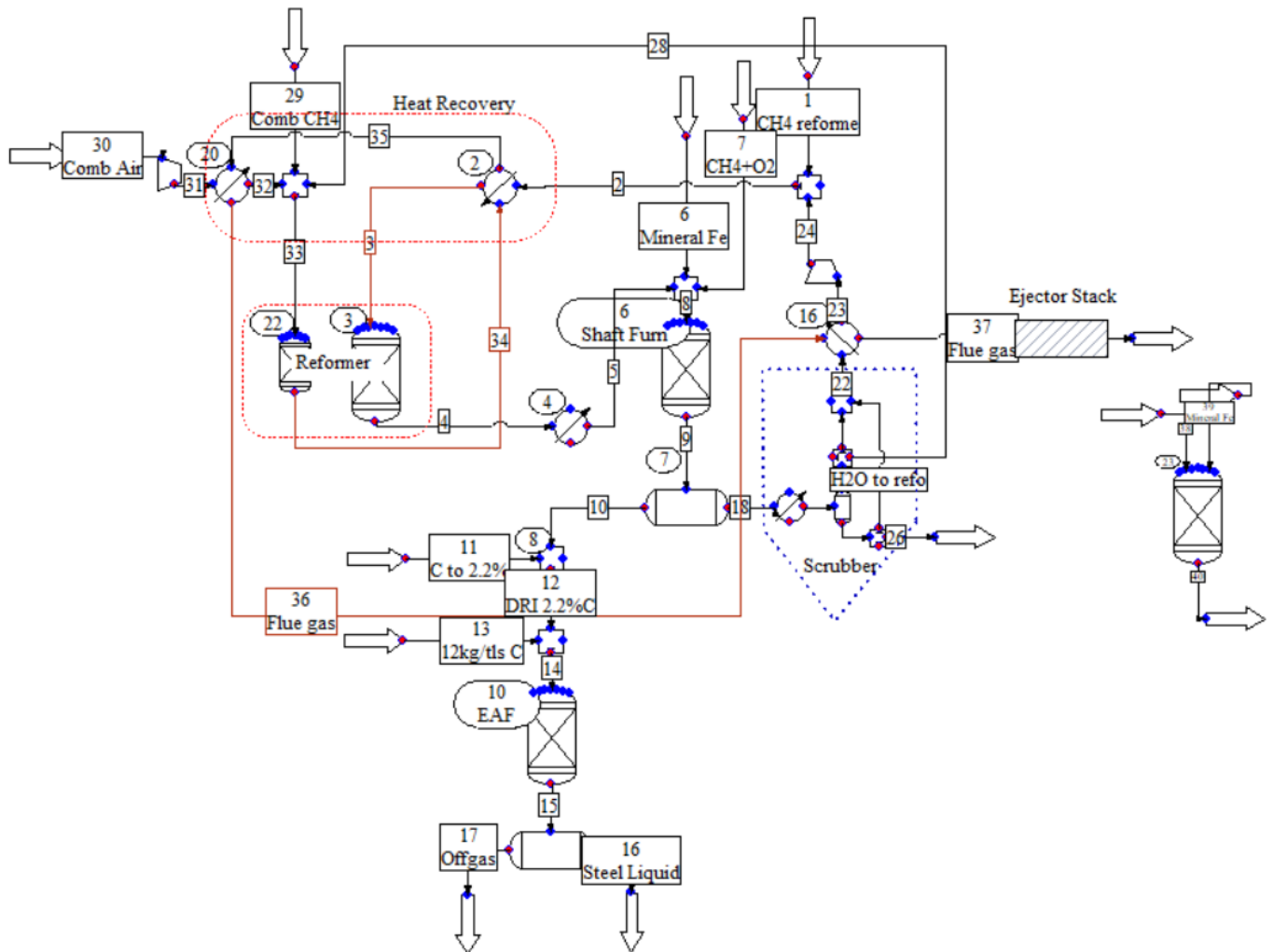
Stream No.	37	38	39	40
Name	Flue gas		Mineral Fe	
- - Overall - -				
Molar flow kmol/h	67.5145	63.1215	10.1271	82.2972
Mass flow kg/h	2013.9503	1234.7094	1489.6166	2724.2979
Temp C	108.4290	900.0000	<b>20.0000</b>	900.0000
Pres bar	2.0000	5.0000	<b>5.0000</b>	5.0000
Vapor mole fraction	1.000	1.000	0.0000	1.000
Enth MJ/h	-7460.8	-5939.9	-7742.4	-12514.
Entropy MJ/K/h	0.2244	4.516	-2.487	3.933
Average mol wt	29.8299	19.5608	147.0915	33.1032

Flow rates in kg/h				
Hydrogen	0.0000	43.1909	0.0000	17.8733
Methane	0.0000	0.7905	0.0000	0.0269
Water	175.6000	162.0072	0.0000	389.9823
CalciumCarbonate	0.0000	0.0000	0.0000	0.0000
Calcium Oxide	0.0000	0.0000	25.6562	25.6562
Carbon oxide	0.0001	714.8619	0.0000	319.6371
Carbon Dioxide	590.4907	313.8589	0.0000	936.9406
Oxygen	43.7086	0.0000	0.0000	0.0000
Nitrogen	1204.1510	0.0000	0.0000	0.0000
Carbon	0.0000	0.0000	0.0000	0.0000
Ferric Oxide	0.0000	0.0000	1429.7791	0.0000
Magnesium Oxide	0.0000	0.0000	18.0428	18.0428
Silicon Dioxide	0.0000	0.0000	16.1386	16.1386
Iron	0.0000	0.0000	0.0000	1000.0000

Component mole %				
Hydrogen	0.000001	33.944291	0.000000	10.773894
Methane	0.000000	0.078058	0.000000	0.002035
Water	14.437549	14.246970	0.000000	26.304218

CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	4.517728	0.555932
Carbon oxide	0.000003	40.432581	0.000000	13.866244
Carbon Dioxide	19.873066	11.298100	0.000000	25.868750
Oxygen	2.023174	0.000000	0.000000	0.000000
Nitrogen	63.666213	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	88.409501	0.000000
Magnesium Oxide	0.000000	0.000000	4.420480	0.543966
Silicon Dioxide	0.000000	0.000000	2.652285	0.326379
Iron	0.000000	0.000000	0.000000	21.758579

CHEMCAD 7.1.1.2



## ISCaL Iron and Steel plant

### STREAM PROPERTIES

Stream No.	1	2	3	4
Name	CH4 reformer			
- - Overall - -				
Temp C	<b>20.0000</b>	305.7027	508.0510	780.0000
Pres bar	<b>5.0000</b>	5.0000	5.0000	5.0000
Molar flow kmol/h	6.9534	39.9117	39.9117	39.9117
Mass flow kg/h	111.5526	782.1992	782.1992	782.1992
Average mol wt	16.0430	19.5982	19.5982	19.5982

#### Component mole fractions

Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	1.000000	0.174218	0.174218	0.174218
Water	0.000000	0.751659	0.751659	0.751659
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.000000	0.074122	0.074122	0.074122
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	5	6	7	8
Name				
- - Overall - -				
Temp C	800.0000	544.5538	409.0000	650.0000
Pres bar	5.0000	5.0000	5.0000	5.0000
Molar flow kmol/h	53.5345	53.5345	66.5345	56.5874
Mass flow kg/h	782.1966	782.1966	1511.1976	1511.2012
Average mol wt	14.6111	14.6111	22.7130	26.7056

#### Component mole fractions

Hydrogen	0.417793	0.417793	0.336162	0.434207
Methane	0.002652	0.002652	0.002134	0.013522
Water	0.397061	0.397061	0.319480	0.314659
CalciumCarbonate	0.000000	0.000000	0.000000	0.153757
Calcium Oxide	0.000000	0.000000	0.195387	0.075976
Carbon oxide	0.091142	0.091142	0.073334	0.003219
Carbon Dioxide	0.091352	0.091352	0.073503	0.004660
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	9	10	11	12
Name		Mineral Fe		
- - Overall - -				
Temp C	650.0000	<b>20.0000</b>	367.1494	495.6178
Pres bar	5.0000	<b>1.0000</b>	5.0000	5.0000
Molar flow kmol/h	43.5874	10.1271	53.7145	53.7145
Mass flow kg/h	399.2820	1489.6167	1888.8986	1888.8986
Average mol wt	9.1605	147.0916	35.1655	35.1655

Component mole fractions				
Hydrogen	0.563710	0.000000	0.457430	0.457430
Methane	0.017555	0.000000	0.014245	0.014245
Water	0.408507	0.000000	0.331489	0.331489
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.045177	0.008518	0.008518
Carbon oxide	0.004179	0.000000	0.003391	0.003391
Carbon Dioxide	0.006050	0.000000	0.004909	0.004909
Oxygen	0.000000	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.884095	0.166684	0.166684
Magnesium Oxide	0.000000	0.044205	0.008334	0.008334
Silicon Dioxide	0.000000	0.026523	0.005001	0.005001
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	13	14	15	16
Name				C+O2
- - Overall - -				
Temp C	855.0000	900.0000	700.0000	<b>20.0000</b>
Pres bar	5.0000	5.0000	4.0000	<b>1.0000</b>
Molar flow kmol/h	53.7145	64.1982	19.0805	2.9987
Mass flow kg/h	1888.8986	1888.8594	1059.8375	66.0000
Average mol wt	35.1655	29.4223	55.5456	22.0097

Component mole fractions				
Hydrogen	0.457430	0.014336	0.000000	0.000000
Methane	0.014245	0.000000	0.000000	0.000000
Water	0.331489	0.669589	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.008518	0.007127	0.023978	0.000000
Carbon oxide	0.003391	0.000514	0.000000	0.000000
Carbon Dioxide	0.004909	0.018349	0.000000	0.000000
Oxygen	0.000000	0.000000	0.000000	0.500237
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.499763
Ferric Oxide	0.166684	0.000000	0.000000	0.000000
Magnesium Oxide	0.008334	0.006973	0.023462	0.000000
Silicon Dioxide	0.005001	0.004184	0.014077	0.000000
Iron	0.000000	0.278929	0.938482	0.000000

Stream No.	17	18	19	20
Name			Iron Liquid	
- - Overall - -				
Temp C	631.3670	1600.0000	1600.0000	1600.0000
Pres bar	1.0000	1.0000	1.0000	1.0000
Molar flow kmol/h	22.0792	20.5855	19.0805	1.5050
Mass flow kg/h	1125.8375	1125.8378	1059.8375	66.0000
Average mol wt	50.9910	54.6907	55.5456	43.8524

Component mole fractions				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.000000	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.020722	0.022225	0.023978	0.000000
Carbon oxide	0.000000	0.000486	0.000000	0.006647
Carbon Dioxide	0.000000	0.072314	0.000000	0.989085
Oxygen	0.067939	0.000312	0.000000	0.004267
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.067875	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000

Magnesium Oxide	0.020276	0.021747	0.023462	0.000000
Silicon Dioxide	0.012165	0.013048	0.014077	0.000000
Iron	0.811023	0.869868	0.938482	0.000000

Stream No.	21	22	23	24
Name	CH4+O2+H2O			
- - Overall - -				
Temp C	<b>20.0000</b>	1914.9064	900.0000	899.9969
Pres bar	<b>4.0000</b>	4.0000	4.0000	4.0000
Molar flow kmol/h	13.0000	13.0186	13.0186	58.1363
Mass flow kg/h	293.5187	293.5170	293.5170	1122.5387
Average mol wt	22.5784	22.5459	22.5459	19.3087

Component mole fractions				
Hydrogen	0.000000	0.001476	0.001476	0.016161
Methane	0.134412	0.000000	0.000000	0.000000
Water	0.520306	0.786526	0.786526	0.915536
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.001386	0.001386	0.000878
Carbon Dioxide	0.000000	0.132834	0.132834	0.050008
Oxygen	0.345282	0.077779	0.077779	0.017417
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	25	26	27	28
Name				
- - Overall - -				
Temp C	996.5710	528.0510	376.2373	176.5212
Pres bar	4.0000	4.0000	4.0000	4.0000
Molar flow kmol/h	57.6410	57.6410	57.6410	57.6410
Mass flow kg/h	1122.5385	1122.5385	1122.5385	1122.5385
Average mol wt	19.4746	19.4746	19.4746	19.4746

Component mole fractions				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.939702	0.939702	0.939702	0.939702
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.051324	0.051324	0.051324	0.051324
Oxygen	0.008974	0.008974	0.008974	0.008974
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	29	30	31	32
Name	recycle			
- - Overall - -				
Temp C	140.0000	140.0000	141.8081	167.4300
Pres bar	4.0000	4.0000	4.0000	5.0000
Molar flow kmol/h	24.6827	32.9583	32.9583	32.9583
Mass flow kg/h	451.8919	670.6466	670.6466	670.6466
Average mol wt	18.3081	20.3483	20.3483	20.3483

Component mole fractions				
Hydrogen	0.000001	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.979042	0.910240	0.910240	0.910240
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.000000	0.089760	0.089760	0.089760
Oxygen	0.020957	0.000000	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	33	34	35	36
Name		Air Comb		CH4
- - Overall - -				
Temp C	374.6610	<b>20.0000</b>	650.0000	<b>20.0000</b>
Pres bar	5.0000	<b>1.2000</b>	1.2000	<b>1.2000</b>
Molar flow kmol/h	32.9583	24.1000	24.1000	2.3000
Mass flow kg/h	670.6466	695.3057	695.3057	36.8989
Average mol wt	20.3483	28.8509	28.8509	16.0430

Component mole fractions				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	1.000000
Water	0.910240	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.089760	0.000000	0.000000	0.000000
Oxygen	0.000000	0.210000	0.210000	0.000000
Nitrogen	0.000000	0.790000	0.790000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	37	38	39	40
Name				
- - Overall - -				
Temp C	568.5524	800.0000	300.0000	264.2810
Pres bar	1.2000	1.2000	1.2000	1.2000
Molar flow kmol/h	26.4000	26.4000	26.4000	28.9000
Mass flow kg/h	732.2046	732.2022	732.2022	872.3947
Average mol wt	27.7350	27.7349	27.7349	30.1867

Component mole fractions				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.087121	0.000000	0.000000	0.000000
Water	0.000000	0.174242	0.174242	0.159170
CalciumCarbonate	0.000000	0.000000	0.000000	0.000000
Calcium Oxide	0.000000	0.000000	0.000000	0.086505
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.000000	0.087121	0.087121	0.079585
Oxygen	0.191704	0.017462	0.017462	0.015952
Nitrogen	0.721174	0.721174	0.721174	0.658789
Carbon	0.000000	0.000000	0.000000	0.000000

Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	41	42	43	44
Name				Emission
- - Overall - -				
Temp C	630.0000	650.0000	301.1104	301.1100
Pres bar	1.2000	1.2000	1.2000	1.2000
Molar flow kmol/h	28.9000	27.2239	27.2239	24.7239
Mass flow kg/h	872.3947	872.3948	872.3948	658.4373
Average mol wt	30.1867	32.0452	32.0452	26.6316

Component mole fractions

Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.159170	0.168969	0.168969	0.186055
CalciumCarbonate	0.000000	0.061567	0.061567	0.000000
Calcium Oxide	0.086505	0.030264	0.030264	0.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.079585	0.022918	0.022918	0.025235
Oxygen	0.015952	0.016934	0.016934	0.018646
Nitrogen	0.658789	0.699349	0.699349	0.770064
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	45	46	47	48
Name	Emission			CaO
- - Overall - -				
Temp C	40.0000	301.1104	40.0000	<b>20.0000</b>
Pres bar	1.2000	1.2000	1.2000	<b>1.0132</b>
Molar flow kmol/h	24.7239	2.5000	2.5000	13.0000
Mass flow kg/h	658.4373	213.9574	213.9574	729.0010
Average mol wt	26.6316	85.5830	85.5830	56.0770

Component mole fractions

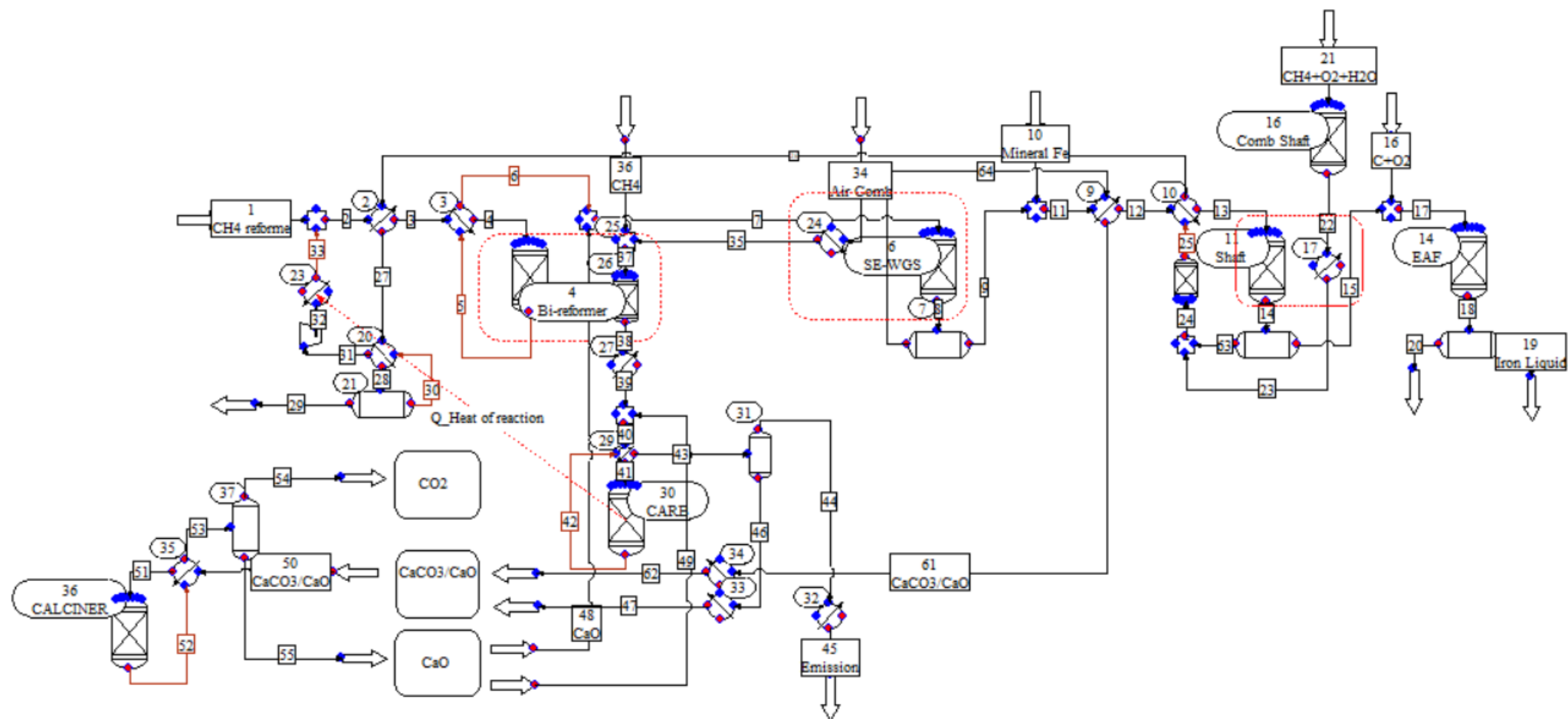
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.186055	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.670438	0.670438	0.000000
Calcium Oxide	0.000000	0.329562	0.329562	1.000000
Carbon oxide	0.000000	0.000000	0.000000	0.000000
Carbon Dioxide	0.025235	0.000000	0.000000	0.000000
Oxygen	0.018646	0.000000	0.000000	0.000000
Nitrogen	0.770064	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000

Stream No.	49	50	51	52
Name		CaCO3/CaO		
- - Overall - -				
Temp C	<b>20.0000</b>	<b>20.0000</b>	747.4302	900.0000
Pres bar	5.0000	1.0000	1.0000	1.0000
Molar flow kmol/h	2.5000	15.5000	15.5000	26.3500
Mass flow kg/h	140.1925	1346.7020	1346.7021	1346.7020

Average mol wt	56.0770	86.8840	86.8840	51.1082
Component mole fractions				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.000000	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.700000	0.700000	0.000000
Calcium Oxide	1.000000	0.300000	0.300000	0.588235
Carbon oxide	0.000000	0.000000	0.000000	0.000002
Carbon Dioxide	0.000000	0.000000	0.000000	0.411762
Oxygen	0.000000	0.000000	0.000000	0.000001
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000
Stream No.	53	54	55	61
Name				CaCO3/CaO
- - Overall - -				
Temp C	40.0000	40.0000	40.0000	387.1494
Pres bar	1.0000	1.0000	1.0000	5.0000
Molar flow kmol/h	26.3500	10.8500	15.5000	13.0000
Mass flow kg/h	1346.7020	477.5085	869.1935	1111.9192
Average mol wt	51.1082	44.0099	56.0770	85.5322
Component mole fractions				
Hydrogen	0.000000	0.000000	0.000000	0.000000
Methane	0.000000	0.000000	0.000000	0.000000
Water	0.000000	0.000000	0.000000	0.000000
CalciumCarbonate	0.000000	0.000000	0.000000	0.669285
Calcium Oxide	0.588235	0.000000	1.000000	0.330715
Carbon oxide	0.000002	0.000006	0.000000	0.000000
Carbon Dioxide	0.411762	0.999992	0.000000	0.000000
Oxygen	0.000001	0.000003	0.000000	0.000000
Nitrogen	0.000000	0.000000	0.000000	0.000000
Carbon	0.000000	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000	0.000000
Stream No.	62	63	64	
Name				
- - Overall - -				
Temp C	40.0000	900.0000	650.0000	
Pres bar	5.0000	4.0000	5.0000	
Molar flow kmol/h	13.0000	45.1177	13.0000	
Mass flow kg/h	1111.9192	829.0217	1111.9191	
Average mol wt	85.5323	18.3747	85.5323	
Component mole fractions				
Hydrogen	0.000000	0.020398	0.000000	
Methane	0.000000	0.000000	0.000000	
Water	0.000000	0.952761	0.000000	
CalciumCarbonate	0.669285	0.000000	0.669285	
Calcium Oxide	0.330715	0.000000	0.330714	
Carbon oxide	0.000000	0.000732	0.000000	
Carbon Dioxide	0.000000	0.026108	0.000000	
Oxygen	0.000000	0.000000	0.000000	
Nitrogen	0.000000	0.000000	0.000000	

Carbon	0.000000	0.000000	0.000000
Ferric Oxide	0.000000	0.000000	0.000000
Magnesium Oxide	0.000000	0.000000	0.000000
Silicon Dioxide	0.000000	0.000000	0.000000
Iron	0.000000	0.000000	0.000000

CHEMCAD 7.1.2



# Integrated Solar Calcium Looping coupled with Rankine power cycle

Simulation: CaL+Rankine\_02\_06

## STREAM PROPERTIES

Stream No.	1	2	3	4
Name				
- - Overall - -				
Molar flow kmol/h	56802.6602	56802.6602	56802.6602	56802.6602
Mass flow kg/h	1023299.8750	1023299.8750	1023299.8750	1023299.8750
Temp C	266.9400	352.2542	352.2553	538.0000
Pres bar	170.0000	170.0000	170.0000	170.0000
Vapor mole fraction	0.0000	1.000E-006	1.000	1.000
Enth MJ/h	-1.5149E+007	-1.4652E+007	-1.3684E+007	-1.2880E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	767.8475	560.3787	104.5689	50.9179
Actual vol m3/h	1332.6863	1826.0862	9785.8955	20097.0625
Std liq m3/h	1023.3013	1023.3013	1023.3013	1023.3013
Std vap 0 C m3/h	1273154.7500	1273154.7500	1273154.7500	1273154.7500
- - Vapor only - -				
Molar flow kmol/h		0.0568	56802.6602	56802.6602
Mass flow kg/h		1.0233	1023299.8750	1023299.8750
Average mol wt		18.0150	18.0150	18.0150
Actual dens kg/m3		104.5703	104.5689	50.9179
Actual vol m3/h		0.0098	9785.8955	20097.0625
Std liq m3/h		0.0010	1023.3013	1023.3013
Std vap 0 C m3/h		1.2732	1273154.7500	1273154.7500
Cp J/kmol-K		159556.9531	159524.2500	50274.5078
Z factor		0.5633	0.5633	0.8920
Visc Pa-sec		2.736e-005	2.736e-005	3.200e-005
Th cond W/m-K		0.0789	0.0789	0.0854
- - Liquid only - -				
Molar flow kmol/h	56802.6602	56802.6016		
Mass flow kg/h	1023299.8750	1023298.8125		
Average mol wt	18.0150	18.0150		
Actual dens kg/m3	767.8475	560.3812		
Actual vol m3/h	1332.6863	1826.0764		
Std liq m3/h	1023.3013	1023.3002		
Std vap 0 C m3/h	1273154.7500	1273153.5000		
Cp J/kmol-K	92175.3828	115202.8750		
Z factor	0.1222	0.1626		
Visc Pa-sec	0.0001041	6.299e-005		
Th cond W/m-K	0.5969	0.4442		
Surf. tens. N/m	0.0221	0.0032		
Flow rates in kg/h				
Water	1023299.8750	1023299.8750	1023299.8750	1023299.8750
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	5	6	7	8
Name				
- - Overall - -				
Molar flow kmol/h	56802.6602	50865.1094	50865.1094	46374.1289
Mass flow kg/h	1023299.8750	916335.0000	916335.0000	835430.0000
Temp C	416.4057	416.4057	325.9363	325.9363
Pres bar	75.9000	75.9000	37.7000	37.7000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-1.3088E+007	-1.1720E+007	-1.1861E+007	-1.0814E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	26.4528	26.4528	14.8286	14.8286
Actual vol m3/h	38684.0430	34640.4219	61795.2578	56339.2344
Std liq m3/h	1023.3013	916.3361	916.3361	835.4310
Std vap 0 C m3/h	1273154.7500	1140072.6250	1140072.6250	1039413.3750
- - Vapor only - -				
Molar flow kmol/h	56802.6602	50865.1094	50865.1094	46374.1289
Mass flow kg/h	1023299.8750	916335.0000	916335.0000	835430.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	26.4528	26.4528	14.8286	14.8286
Actual vol m3/h	38684.0430	34640.4219	61795.2578	56339.2344
Std liq m3/h	1023.3013	916.3361	916.3361	835.4310
Std vap 0 C m3/h	1273154.7500	1140072.6250	1140072.6250	1039413.3750
Cp J/kmol-K	47788.5859	47788.5859	46382.0742	46382.0742
Z factor	0.9017	0.9017	0.9196	0.9196
Visc Pa-sec	2.602e-005	2.602e-005	2.188e-005	2.188e-005
Th cond W/m-K	0.0636	0.0636	0.0502	0.0502
Flow rates in kg/h				
Water	1023299.8750	916335.0000	916335.0000	835430.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	9	10	11	12
Name				
- - Overall - -				
Molar flow kmol/h	46374.1289	46374.1289	43673.0469	43673.0469
Mass flow kg/h	835430.0000	835430.0000	786770.0000	786770.0000
Temp C	538.0000	422.4374	422.4374	322.3310
Pres bar	37.7000	16.4000	16.4000	7.2000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-1.0401E+007	-1.0594E+007	-9.9770E+006	-1.0132E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	10.3210	5.2118	5.2118	2.6598
Actual vol m3/h	80944.8750	160294.7813	150958.3438	295795.5000
Std liq m3/h	835.4310	835.4310	786.7710	786.7710

Std vap 0 C m3/h	1039413.3750	1039413.3750	978872.2500	978872.2500
- - Vapor only - -				
Molar flow kmol/h	46374.1289	46374.1289	43673.0469	43673.0469
Mass flow kg/h	835430.0000	835430.0000	786770.0000	786770.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	10.3210	5.2118	5.2118	2.6598
Actual vol m3/h	80944.8750	160294.7813	150958.3438	295795.5000
Std liq m3/h	835.4310	835.4310	786.7710	786.7710
Std vap 0 C m3/h	1039413.3750	1039413.3750	978872.2500	978872.2500
Cp J/kmol-K	40625.2031	38891.6016	38891.6016	37550.5117
Z factor	0.9759	0.9803	0.9803	0.9851
Visc Pa-sec	3.040e-005	2.538e-005	2.538e-005	2.127e-005
Th cond W/m-K	0.0744	0.0588	0.0588	0.0467

Flow rates in kg/h				
Water	835430.0000	835430.0000	786770.0000	786770.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	13	14	15	16
Name				

- - Overall - -				
Molar flow kmol/h	40971.4102	40971.4102	38459.3398	38459.3398
Mass flow kg/h	738100.0000	738100.0000	692845.0000	692845.0000
Temp C	322.3310	212.8200	212.8200	109.0289
Pres bar	7.2000	2.5000	2.5000	0.7300
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-9.5048E+006	-9.6603E+006	-9.0680E+006	-9.2040E+006
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	2.6598	1.1258	1.1258	0.4163
Actual vol m3/h	277497.4375	655601.5000	615404.6250	1664307.3750
Std liq m3/h	738.1010	738.1010	692.8459	692.8459
Std vap 0 C m3/h	918318.7500	918318.7500	862014.0000	862014.0000

- - Vapor only - -				
Molar flow kmol/h	40971.4102	40971.4102	38459.3398	38459.3398
Mass flow kg/h	738100.0000	738100.0000	692845.0000	692845.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	2.6598	1.1258	1.1258	0.4163
Actual vol m3/h	277497.4375	655601.5000	615404.6250	1664307.3750
Std liq m3/h	738.1010	738.1010	692.8459	692.8459
Std vap 0 C m3/h	918318.7500	918318.7500	862014.0000	862014.0000
Cp J/kmol-K	37550.5117	36405.6758	36405.6758	35980.4531
Z factor	0.9851	0.9902	0.9902	0.9943
Visc Pa-sec	2.127e-005	1.676e-005	1.676e-005	1.254e-005
Th cond W/m-K	0.0467	0.0350	0.0350	0.0255

Flow rates in kg/h				
Water	738100.0000	738100.0000	692845.0000	692845.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000

Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	17	18	19	20
Name				
- - Overall - -				
Molar flow kmol/h	36877.8789	36877.8789	34426.3125	34426.3086
Mass flow kg/h	664355.0000	664355.0000	620190.0000	620190.0000
Temp C	109.0289	68.2960	68.2960	32.8051
Pres bar	0.7300	0.2900	0.2900	0.0500
Vapor mole fraction	1.000	0.9790	0.9790	0.9213
Enth MJ/h	-8.8256E+006	-8.9073E+006	-8.3152E+006	-8.4415E+006
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	0.4163	0.1886	0.1886	0.0385
Actual vol m3/h	1595870.6250	3522891.7500	3288697.2500	16123433.0000
Std liq m3/h	664.3558	664.3558	620.1908	620.1907
Std vap 0 C m3/h	826567.7500	826567.7500	771619.1875	771619.1250
- - Vapor only - -				
Molar flow kmol/h	36877.8789	36102.6211	33702.5938	31717.9434
Mass flow kg/h	664355.0000	650389.0000	607152.0000	571399.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	0.4163	0.1846	0.1846	0.0354
Actual vol m3/h	1595870.6250	3522877.2500	3288684.0000	16123384.0000
Std liq m3/h	664.3558	650.3896	607.1530	571.3995
Std vap 0 C m3/h	826567.7500	809191.4375	755398.0625	710914.7500
Cp J/kmol-K	35980.4531	35522.5195	35522.5195	34344.9805
Z factor	0.9943	0.9969	0.9969	0.9993
Visc Pa-sec	1.254e-005	1.092e-005	1.092e-005	9.521e-006
Th cond W/m-K	0.0255	0.0224	0.0224	0.0200
- - Liquid only - -				
Molar flow kmol/h		775.2568	723.7173	2708.3623
Mass flow kg/h		13966.2510	13037.7676	48791.1445
Average mol wt		18.0150	18.0150	18.0150
Actual dens kg/m3		978.4242	978.4242	994.4775
Actual vol m3/h		14.2742	13.3253	49.0621
Std liq m3/h		13.9663	13.0378	48.7912
Std vap 0 C m3/h		17376.3320	16221.1465	60704.2734
Cp J/kmol-K		75624.3750	75624.3750	75428.1172
Z factor		0.0003	0.0003	0.0000
Visc Pa-sec		0.0004211	0.0004211	0.0007816
Th cond W/m-K		0.6550	0.6550	0.6167
Surf. tens. N/m		0.0645	0.0645	0.0708
Flow rates in kg/h				
Water	664355.0000	664355.0000	620190.0000	620190.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000

CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	21	22	23	24
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Name

- - Overall - -

Molar flow kmol/h	40971.4063	40971.4063	40971.4063	40971.4063
Mass flow kg/h	738100.0000	738100.0000	738100.0000	738100.0000
Temp C	32.8051	32.8051	32.9107	65.5861
Pres bar	0.0500	0.0500	3.5000	3.5000
Vapor mole fraction	0.7879	1.000E-005	0.0000	0.0000
Enth MJ/h	-1.0285E+007	-1.1695E+007	-1.1694E+007	-1.1593E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	0.0450	994.4775	994.4437	979.9429
Actual vol m3/h	16409842.0000	742.1987	742.2240	753.2070
Std liq m3/h	738.1009	738.1009	738.1009	738.1009
Std vap 0 C m3/h	918318.6875	918318.6875	918318.6875	918318.6875

- - Vapor only - -

Molar flow kmol/h	32281.1523	0.0000
Mass flow kg/h	581545.0000	0.0000
Average mol wt	18.0150	
Actual dens kg/m3	0.0354	
Actual vol m3/h	16409684.0000	
Std liq m3/h	581.5457	
Std vap 0 C m3/h	723538.3750	
Cp J/kmol-K	34344.9805	
Z factor	0.9993	
Visc Pa-sec	9.521e-006	
Th cond W/m-K	0.0200	

- - Liquid only - -

Molar flow kmol/h	8690.2559	40971.4063	40971.4063	40971.4063
Mass flow kg/h	156555.0000	738100.0000	738100.0000	738100.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	994.4775	994.4775	994.4437	979.9429
Actual vol m3/h	157.4243	742.1987	742.2240	753.2070
Std liq m3/h	156.5552	738.1009	738.1009	738.1009
Std vap 0 C m3/h	194780.3125	918318.6875	918318.6875	918318.6875
Cp J/kmol-K	75428.1172	75428.1172	75428.1172	75558.9531
Z factor	0.0000	0.0000	0.0033	0.0030
Visc Pa-sec	0.0007816	0.0007816	0.0007803	0.0004386
Th cond W/m-K	0.6167	0.6167	0.6168	0.6526
Surf. tens. N/m	0.0708	0.0708	0.0707	0.0650

Flow rates in kg/h

Water	738100.0000	738100.0000	738100.0000	738100.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	25	26	27	28
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Name

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- - Overall - -
Molar flow kmol/h      40971.4063      40971.4063      56802.6602      56802.6602
Mass flow kg/h         738100.0000      738100.0000      1023299.8750      1023299.8750
Temp C                 87.8362        123.2248        138.9198        143.9470
Pres bar               3.5000         3.5000         3.5000         170.0000
Vapor mole fraction    0.0000         0.0000         1.000E-006      0.0000
Enth MJ/h             -1.1524E+007    -1.1414E+007    -1.5755E+007    -1.5733E+007
Tc C                  374.2000        374.2000        374.2000        374.2000
Pc bar                221.1823        221.1823        221.1823        221.1823
Std. sp gr. wtr = 1    1.000          1.000          1.000          1.000
Std. sp gr. air = 1    0.622          0.622          0.622          0.622
Degree API            10.0000         10.0000         10.0000         10.0000
Average mol wt        18.0150         18.0150         18.0150         18.0150
Actual dens kg/m3      966.2982        939.8710        926.5319        922.0535
Actual vol m3/h        763.8428        785.3204        1104.4409        1109.8053
Std liq m3/h          738.1009        738.1009        1023.3013        1023.3013
Std vap 0 C m3/h      918318.6875     918318.6875     1273154.7500     1273154.7500
- - Vapor only - -
Molar flow kmol/h                                0.0000
Mass flow kg/h                                0.0000
Average mol wt
Actual dens kg/m3
Actual vol m3/h
Std liq m3/h
Std vap 0 C m3/h
Cp J/kmol-K
Z factor
Visc Pa-sec
Th cond W/m-K
- - Liquid only - -
Molar flow kmol/h      40971.4063      40971.4063      56802.6602      56802.6602
Mass flow kg/h         738100.0000      738100.0000      1023299.8750      1023299.8750
Average mol wt        18.0150         18.0150         18.0150         18.0150
Actual dens kg/m3      966.2982        939.8710        926.5319        922.0536
Actual vol m3/h        763.8428        785.3204        1104.4409        1109.8053
Std liq m3/h          738.1009        738.1009        1023.3013        1023.3013
Std vap 0 C m3/h      918318.6875     918318.6875     1273154.7500     1273154.7500
Cp J/kmol-K           75853.3359      76834.6250      77521.5234      77783.2031
Z factor               0.0029          0.0028          0.0027          0.1291
Visc Pa-sec           0.0003236       0.0002224       0.0001948       0.0001927
Th cond W/m-K         0.6694          0.6838          0.6855          0.6854
Surf. tens. N/m       0.0609          0.0541          0.0510          0.0499

Flow rates in kg/h
Water                  738100.0000      738100.0000      1023299.8750      1023299.8750
Methane                0.0000           0.0000           0.0000           0.0000
Carbon Dioxide          0.0000           0.0000           0.0000           0.0000
Nitrogen               0.0000           0.0000           0.0000           0.0000
Oxygen                 0.0000           0.0000           0.0000           0.0000
Calcium Carbonat       0.0000           0.0000           0.0000           0.0000
CaO                    0.0000           0.0000           0.0000           0.0000
CaO_inerte             0.0000           0.0000           0.0000           0.0000
CaCO3_Perry            0.0000           0.0000           0.0000           0.0000
Water_orange           0.0000           0.0000           0.0000           0.0000

Stream No.              29              30              31              32
Name
- - Overall - -
Molar flow kmol/h      56802.6602      56802.6602      5937.5522      5937.5522
Mass flow kg/h         1023299.8750     1023299.8750     106965.0000     106965.0000
Temp C                 178.7763        221.2157        416.4057        241.2157
Pres bar               170.0000        170.0000        75.9000         75.9000

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Vapor mole fraction	0.0000	0.0000	1.000	0.0000
Enth MJ/h	-1.5577E+007	-1.5378E+007	-1.3680E+006	-1.5973E+006
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	888.0482	839.5456	26.4528	808.1943
Actual vol m3/h	1152.3022	1218.8735	4043.6230	132.3506
Std liq m3/h	1023.3013	1023.3013	106.9651	106.9651
Std vap 0 C m3/h	1273154.7500	1273154.7500	133082.2031	133082.2031
- - Vapor only - -				
Molar flow kmol/h			5937.5522	
Mass flow kg/h			106965.0000	
Average mol wt			18.0150	
Actual dens kg/m3			26.4528	
Actual vol m3/h			4043.6230	
Std liq m3/h			106.9651	
Std vap 0 C m3/h			133082.2031	
Cp J/kmol-K			47788.5859	
Z factor			0.9017	
Visc Pa-sec			2.602e-005	
Th cond W/m-K			0.0636	
- - Liquid only - -				
Molar flow kmol/h	56802.6602	56802.6602		5937.5522
Mass flow kg/h	1023299.8750	1023299.8750		106965.0000
Average mol wt	18.0150	18.0150		18.0150
Actual dens kg/m3	888.0482	839.5456		808.1944
Actual vol m3/h	1152.3022	1218.8735		132.3506
Std liq m3/h	1023.3013	1023.3013		106.9651
Std vap 0 C m3/h	1273154.7500	1273154.7500		133082.2031
Cp J/kmol-K	80138.2813	84717.6172		87628.7578
Z factor	0.1244	0.1214		0.0548
Visc Pa-sec	0.0001541	0.0001253		0.0001124
Th cond W/m-K	0.6771	0.6488		0.6288
Surf. tens. N/m	0.0425	0.0329		0.0282
Flow rates in kg/h				
Water	1023299.8750	1023299.8750	106965.0000	106965.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	33	34	35	36
Name				
- - Overall - -				
Molar flow kmol/h	4490.9800	10428.5313	10428.5313	2701.0825
Mass flow kg/h	80905.0000	187870.0000	187870.0000	48660.0000
Temp C	325.9363	246.8827	198.7763	422.4374
Pres bar	37.7000	37.7000	37.7000	16.4000
Vapor mole fraction	1.000	0.4809	0.0000	1.000
Enth MJ/h	-1.0472E+006	-2.6445E+006	-2.8429E+006	-6.1706E+005
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000

Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	14.8286	36.8202	865.7601	5.2118
Actual vol m3/h	5456.0244	5102.3643	217.0001	9336.4443
Std liq m3/h	80.9051	187.8703	187.8703	48.6601
Std vap 0 C m3/h	100659.2422	233741.4219	233741.4219	60541.1133
- - Vapor only - -				
Molar flow kmol/h	4490.9800	5015.2852		2701.0825
Mass flow kg/h	80905.0000	90350.3594		48660.0000
Average mol wt	18.0150	18.0150		18.0150
Actual dens kg/m3	14.8286	18.1414		5.2118
Actual vol m3/h	5456.0244	4980.3389		9336.4443
Std liq m3/h	80.9051	90.3505		48.6601
Std vap 0 C m3/h	100659.2422	112410.8359		60541.1133
Cp J/kmol-K	46382.0742	67904.9297		38891.6016
Z factor	0.9196	0.8660		0.9803
Visc Pa-sec	2.188e-005	1.875e-005		2.538e-005
Th cond W/m-K	0.0502	0.0428		0.0588
- - Liquid only - -				
Molar flow kmol/h		5413.2461	10428.5313	
Mass flow kg/h		97519.6250	187870.0000	
Average mol wt		18.0150	18.0150	
Actual dens kg/m3		799.1755	865.7601	
Actual vol m3/h		122.0253	217.0001	
Std liq m3/h		97.5198	187.8703	
Std vap 0 C m3/h		121330.5938	233741.4219	
Cp J/kmol-K		88544.6250	82068.1406	
Z factor		0.0274	0.0275	
Visc Pa-sec		0.0001085	0.0001347	
Th cond W/m-K		0.6223	0.6662	
Surf. tens. N/m		0.0269	0.0381	
Flow rates in kg/h				
Water	80905.0000	187870.0000	187870.0000	48660.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	37	38	39	40
Name				
- - Overall - -				
Molar flow kmol/h	13129.6133	13129.6133	2701.6375	2512.0735
Mass flow kg/h	236530.0000	236530.0000	48670.0000	45255.0000
Temp C	202.6303	163.9470	322.3310	212.8200
Pres bar	16.4000	16.4000	7.2000	2.5000
Vapor mole fraction	0.2528	0.0000	1.000	1.000
Enth MJ/h	-3.4599E+006	-3.6160E+006	-6.2674E+005	-5.9230E+005
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	30.9946	903.1984	2.6598	1.1258
Actual vol m3/h	7631.3379	261.8804	18298.0645	40196.7813

Std liq m3/h	236.5303	236.5303	48.6701	45.2551
Std vap 0 C m3/h	294282.5313	294282.5313	60553.5508	56304.7266
- - Vapor only - -				
Molar flow kmol/h	3319.6509		2701.6375	2512.0735
Mass flow kg/h	59803.5117		48670.0000	45255.0000
Average mol wt	18.0150		18.0150	18.0150
Actual dens kg/m3	8.0531		2.6598	1.1258
Actual vol m3/h	7426.1250		18298.0645	40196.7813
Std liq m3/h	59.8036		48.6701	45.2551
Std vap 0 C m3/h	74405.4844		60553.5508	56304.7266
Cp J/kmol-K	52923.9766		37550.5117	36405.6758
Z factor	0.9275		0.9851	0.9902
Visc Pa-sec	1.659e-005		2.127e-005	1.676e-005
Th cond W/m-K	0.0358		0.0467	0.0350
- - Liquid only - -				
Molar flow kmol/h	9809.9619	13129.6133		
Mass flow kg/h	176726.4688	236530.0000		
Average mol wt	18.0150	18.0150		
Actual dens kg/m3	861.1857	903.1984		
Actual vol m3/h	205.2130	261.8804		
Std liq m3/h	176.7267	236.5303		
Std vap 0 C m3/h	219877.0156	294282.5313		
Cp J/kmol-K	82460.6563	78993.4531		
Z factor	0.0120	0.0123		
Visc Pa-sec	0.0001315	0.0001633		
Th cond W/m-K	0.6636	0.6823		
Surf. tens. N/m	0.0372	0.0458		
Flow rates in kg/h				
Water	236530.0000	236530.0000	48670.0000	45255.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	41	42	43	44
Name				
- - Overall - -				
Molar flow kmol/h	2512.0735	1581.4601	4093.5330	4093.5330
Mass flow kg/h	45255.0000	28490.0000	73745.0000	73745.0000
Temp C	107.0000	109.0289	91.0519	91.0519
Pres bar	2.5000	0.7300	0.7300	0.7300
Vapor mole fraction	0.0000	1.000	0.4106	1.000E-007
Enth MJ/h	-7.0292E+005	-3.7847E+005	-1.0814E+006	-1.1504E+006
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	952.6379	0.4163	1.0640	964.1204
Actual vol m3/h	47.5049	68436.8438	69307.4609	76.4894
Std liq m3/h	45.2551	28.4900	73.7451	73.7451
Std vap 0 C m3/h	56304.7266	35446.2891	91751.0000	91751.0000
- - Vapor only - -				
Molar flow kmol/h		1581.4601	1680.9119	0.0000
Mass flow kg/h		28490.0000	30281.6289	0.0000

Average mol wt		18.0150	18.0150	
Actual dens kg/m3		0.4163	0.4372	
Actual vol m3/h		68436.8438	69262.3828	
Std liq m3/h		28.4900	30.2817	
Std vap 0 C m3/h		35446.2891	37675.3672	
Cp J/kmol-K		35980.4531	36798.1914	
Z factor		0.9943	0.9935	
Visc Pa-sec		1.254e-005	1.183e-005	
Th cond W/m-K		0.0255	0.0241	
- - Liquid only - -				
Molar flow kmol/h	2512.0735		2412.6208	4093.5330
Mass flow kg/h	45255.0000		43463.3633	73745.0000
Average mol wt	18.0150		18.0150	18.0150
Actual dens kg/m3	952.6379		964.1204	964.1204
Actual vol m3/h	47.5049		45.0808	76.4894
Std liq m3/h	45.2551		43.4634	73.7451
Std vap 0 C m3/h	56304.7266		54075.6289	91751.0000
Cp J/kmol-K	76278.5625		75951.4688	75951.4688
Z factor	0.0020		0.0006	0.0006
Visc Pa-sec	0.0002603		0.0003110	0.0003110
Th cond W/m-K	0.6790		0.6713	0.6713
Surf. tens. N/m	0.0573		0.0603	0.0603
Flow rates in kg/h				
Water	45255.0000	28490.0000	73745.0000	73745.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	45	46	47	48
Name				
- - Overall - -				
Molar flow kmol/h	2451.5681	2451.5681	16200.0000	16200.0000
Mass flow kg/h	44165.0000	44165.0000	712962.0000	712962.0000
Temp C	68.2960	68.2960	20.0000	286.9341
Pres bar	0.2900	0.2900	<b>74.0000</b>	2.0000
Vapor mole fraction	0.9790	1.000E-007	0.0000	1.000
Enth MJ/h	-5.9214E+005	-6.9319E+005	-6.5536E+006	-6.1957E+006
Tc C	374.2000	374.2000	31.0500	31.0500
Pc bar	221.1823	221.1823	73.8152	73.8152
Std. sp gr. wtr = 1	1.000	1.000	0.827	0.827
Std. sp gr. air = 1	0.622	0.622	1.520	1.520
Degree API	10.0000	10.0000	39.6004	39.6004
Average mol wt	18.0150	18.0150	44.0100	44.0100
Actual dens kg/m3	0.1886	978.4242	773.9944	1.8912
Actual vol m3/h	234194.8594	45.1389	921.1462	376992.0313
Std liq m3/h	44.1651	44.1651	862.1075	862.1075
Std vap 0 C m3/h	54948.5859	54948.5859	363101.0938	363101.0938
- - Vapor only - -				
Molar flow kmol/h	2400.0308	0.0000		16200.0000
Mass flow kg/h	43236.5508	0.0000		712962.0000
Average mol wt	18.0150			44.0100
Actual dens kg/m3	0.1846			1.8912
Actual vol m3/h	234193.9063			376992.0313
Std liq m3/h	43.2366			862.1075
Std vap 0 C m3/h	53793.4414			363101.0938

Cp J/kmol-K	35522.5195			46354.0273
Z factor	0.9969			0.9996
Visc Pa-sec	1.092e-005			2.600e-005
Th cond W/m-K	0.0224			0.0377
- - Liquid only - -				
Molar flow kmol/h	51.5374	2451.5681	16200.0000	
Mass flow kg/h	928.4470	44165.0000	712962.0000	
Average mol wt	18.0150	18.0150	44.0100	
Actual dens kg/m3	978.4242	978.4242	773.9944	
Actual vol m3/h	0.9489	45.1389	921.1462	
Std liq m3/h	0.9284	44.1651	862.1075	
Std vap 0 C m3/h	1155.1422	54948.5859	363101.0938	
Cp J/kmol-K	75624.3750	75624.3750	166886.7656	
Z factor	0.0003	0.0003	0.1939	
Visc Pa-sec	0.0004211	0.0004211	7.526e-005	
Th cond W/m-K	0.6550	0.6550	0.0823	
Surf. tens. N/m	0.0645	0.0645	0.0012	
Flow rates in kg/h				
Water	44165.0000	44165.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	712962.0000	712962.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	49	50	51	52
Name				
- - Overall - -				
Molar flow kmol/h	112200.0000	112200.0000	20250.0000	13522.9512
Mass flow kg/h	4937922.0000	4937922.0000	1135559.3750	1234442.5000
Temp C	286.9908	492.1797	<b>20.0000</b>	330.0000
Pres bar	2.0000	2.0000	<b>1.0000</b>	2.0000
Vapor mole fraction	1.000	1.000	0.0000	0.0000
Enth MJ/h	-4.2911E+007	-4.1793E+007	-1.2866E+007	-1.4389E+007
Tc C	31.0500	31.0500	0.0000	0.0000
Pc bar	73.8152	73.8152	0.0000	0.0000
Std. sp gr. wtr = 1	0.827	0.827	3.297	2.775
Std. sp gr. air = 1	1.520	1.520	1.936	3.152
Degree API	39.6004	39.6004	-88.5865	-80.5007
Average mol wt	44.0100	44.0100	56.0770	91.2850
Actual dens kg/m3	1.8910	1.3828	3297.3230	2757.6580
Actual vol m3/h	2611285.0000	3570920.2500	344.3882	447.6416
Std liq m3/h	5970.8940	5970.8940	344.3882	444.9173
Std vap 0 C m3/h	2514811.5000	2514811.5000	453876.3750	303098.6563
- - Vapor only - -				
Molar flow kmol/h	112200.0000	112200.0000		
Mass flow kg/h	4937922.0000	4937922.0000		
Average mol wt	44.0100	44.0100		
Actual dens kg/m3	1.8910	1.3828		
Actual vol m3/h	2611285.0000	3570920.2500		
Std liq m3/h	5970.8940	5970.8940		
Std vap 0 C m3/h	2514811.5000	2514811.5000		
Cp J/kmol-K	46354.0156	50549.5117		
Z factor	0.9996	1.0005		
Visc Pa-sec	2.601e-005	3.304e-005		
Th cond W/m-K	0.0377	0.0532		

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	4937922.0000	4937922.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	908447.0000	0.2270
CaO_inerte	0.0000	0.0000	227112.0000	151665.2969
CaCO3_Perry	0.0000	0.0000	0.0000	1082776.8750
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	53	54	55	56
Name				

- - Overall - -

Molar flow kmol/h	132450.0000	56802.6602	20250.0000	20250.0000
Mass flow kg/h	6073482.0000	1023299.8750	1848521.0000	1848521.0000
Temp C	540.8174	352.2542	830.0000	330.0000
Pres bar	2.0000	170.0000	2.0000	2.0000
Vapor mole fraction	1.000	0.6142	0.0000	0.0000
Enth MJ/h	-5.3845E+007	-1.4058E+007	-2.0430E+007	-2.1548E+007
Tc C	31.0500	374.2000	0.0000	0.0000
Pc bar	73.8152	221.1823	0.0000	0.0000
Std. sp gr. wtr = 1	0.962	1.000	2.775	2.775
Std. sp gr. air = 1	1.583	0.622	3.152	3.152
Degree API	15.6333	10.0000	-80.5007	-80.5007
Average mol wt	45.8549	18.0150	91.2850	91.2850
Actual dens kg/m3	1.5989	152.3855	2730.7583	2757.6580
Actual vol m3/h	3798447.5000	6715.2046	676.9259	670.3228
Std liq m3/h	6315.2817	1023.3013	666.2433	666.2433
Std vap 0 C m3/h	2968687.7500	1273154.7500	453876.3750	453876.3750

- - Vapor only - -

Molar flow kmol/h	112200.0000	34890.2656
Mass flow kg/h	4937922.0000	628548.0000
Average mol wt	44.0100	18.0150
Actual dens kg/m3	1.3001	104.5703
Actual vol m3/h	3798103.0000	6010.7705
Std liq m3/h	5970.8940	628.5490
Std vap 0 C m3/h	2514811.5000	782018.0625
Cp J/kmol-K	51459.3164	159556.9531
Z factor	1.0005	0.5633
Visc Pa-sec	3.456e-005	2.736e-005
Th cond W/m-K	0.0565	0.0789

- - Liquid only - -

Molar flow kmol/h	21912.3945
Mass flow kg/h	394752.0000
Average mol wt	18.0150
Actual dens kg/m3	560.3812
Actual vol m3/h	704.4344
Std liq m3/h	394.7523
Std vap 0 C m3/h	491136.6875
Cp J/kmol-K	115202.8750
Z factor	0.1626
Visc Pa-sec	6.299e-005
Th cond W/m-K	0.4442
Surf. tens. N/m	0.0032

Flow rates in kg/h				
Water	0.0000	1023299.8750	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	4937922.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000

Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	908447.0000	0.0000	0.3400	0.3400
CaO_inerte	227112.0000	0.0000	227112.0000	227112.0000
CaCO3_Perry	0.0000	0.0000	1621408.7500	1621408.7500
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No. 57 58 59 60

Name

- - Overall - -

Molar flow kmol/h	6727.0503	13522.9512	112200.0000	96000.0000
Mass flow kg/h	614079.0000	1234442.5000	4937922.0000	4224960.5000
Temp C	330.0000	161.5000	595.0472	558.7759
Pres bar	2.0000	2.0000	2.0000	2.0000
Vapor mole fraction	0.0000	0.0000	1.000	1.000
Enth MJ/h	-7.1581E+006	-1.4610E+007	-4.1199E+007	-3.5432E+007
Tc C	0.0000	0.0000	31.0500	31.0500
Pc bar	0.0000	0.0000	73.8152	73.8152
Std. sp gr. wtr = 1	2.775	2.775	0.827	0.827
Std. sp gr. air = 1	3.152	3.152	1.520	1.520
Degree API	-80.5007	-80.5007	39.6004	39.6004
Average mol wt	91.2850	91.2850	44.0100	44.0100
Actual dens kg/m3	2757.6580	2766.7095	1.2188	1.2720
Actual vol m3/h	222.6812	446.1771	4051330.7500	3321471.2500
Std liq m3/h	221.3260	444.9173	5970.8940	5108.7866
Std vap 0 C m3/h	150777.7344	303098.6563	2514811.5000	2151710.7500

- - Vapor only - -

Molar flow kmol/h			112200.0000	96000.0000
Mass flow kg/h			4937922.0000	4224960.5000
Average mol wt			44.0100	44.0100
Actual dens kg/m3			1.2188	1.2720
Actual vol m3/h			4051330.7500	3321471.2500
Std liq m3/h			5970.8940	5108.7866
Std vap 0 C m3/h			2514811.5000	2151710.7500
Cp J/kmol-K			52303.6016	51718.4258
Z factor			1.0006	1.0005
Visc Pa-sec			3.619e-005	3.511e-005
Th cond W/m-K			0.0601	0.0577

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	4937922.0000	4224960.5000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.1129	0.2270	0.0000	0.0000
CaO_inerte	75446.5547	151665.2969	0.0000	0.0000
CaCO3_Perry	538632.0000	1082776.8750	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No. 61 62 63 64

Name

- - Overall - -

Molar flow kmol/h	96000.0000	96000.0000	96000.0000	48600.0000
Mass flow kg/h	4224960.5000	4224960.5000	4224960.5000	2138885.2500
Temp C	474.5651	396.0816	287.0967	114.8022
Pres bar	2.0000	2.0000	2.0000	2.3700
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-3.5844E+007	-3.6217E+007	-3.6715E+007	-1.8956E+007
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152

Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	1.4154	1.5818	1.8906	3.2488
Actual vol m3/h	2984919.7500	2671052.0000	2234679.5000	658357.7500
Std liq m3/h	5108.7866	5108.7866	5108.7866	2586.3218
Std vap 0 C m3/h	2151710.7500	2151710.7500	2151710.7500	1089302.8750
- - Vapor only - -				
Molar flow kmol/h	96000.0000	96000.0000	96000.0000	48600.0000
Mass flow kg/h	4224960.5000	4224960.5000	4224960.5000	2138885.2500
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	1.4154	1.5818	1.8906	3.2488
Actual vol m3/h	2984919.7500	2671052.0000	2234679.5000	658357.7500
Std liq m3/h	5108.7866	5108.7866	5108.7866	2586.3218
Std vap 0 C m3/h	2151710.7500	2151710.7500	2151710.7500	1089302.8750
Cp J/kmol-K	50290.4727	48738.1875	46354.0078	41507.2188
Z factor	1.0004	1.0002	0.9996	0.9955
Visc Pa-sec	3.248e-005	2.988e-005	2.601e-005	1.907e-005
Th cond W/m-K	0.0519	0.0462	0.0377	0.0238

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	4224960.5000	4224960.5000	4224960.5000	2138885.2500
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	65	66	67	68
Name				

- - Overall - -

Molar flow kmol/h	60750.0000	39470.4688	60750.0000	21279.5176
Mass flow kg/h	5545562.0000	3603061.5000	3406677.2500	1942500.7500
Temp C	<b>20.0000</b>	20.0000	69.9954	20.0000
Pres bar	<b>1.0000</b>	1.0000	1.0000	1.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-6.6409E+007	-4.3147E+007	-3.8449E+007	-2.3262E+007
Tc C	0.0000	0.0000	0.0000	0.0000
Pc bar	0.0000	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	2.775	2.775	3.297	2.775
Std. sp gr. air = 1	3.152	3.152	1.936	3.152
Degree API	-80.5007	-80.5007	-88.5865	-80.5007
Average mol wt	91.2850	91.2850	56.0770	91.2850
Actual dens kg/m3	2774.3054	2774.3054	3297.3228	2774.3057
Actual vol m3/h	1998.9010	1298.7256	1033.1646	700.1755
Std liq m3/h	1998.7296	1298.6143	1033.1646	700.1155
Std vap 0 C m3/h	1361628.6250	884677.1875	1361628.8750	476951.5625

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	681336.0000	442677.0000	3406677.2500	238658.4219
CaO_inerte	0.0000	0.0000	0.0000	0.0000

CaCO3_Perry	4864226.0000	3160384.2500	0.0000	1703842.2500
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	69	70	71	72
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Name

- - Overall - -

Molar flow kmol/h	39470.4688	64608.6836	116250.0000	96000.0000
Mass flow kg/h	3603061.5000	5920788.0000	6073482.0000	4224960.5000
Temp C	50.0000	774.0698	830.0000	830.0000
Pres bar	1.0000	1.0000	2.0000	2.0000
Vapor mole fraction	0.0000	0.0000	1.000	1.000
Enth MJ/h	-4.3043E+007	-6.5887E+007	-5.4463E+007	-3.4033E+007
Tc C	0.0000	0.0000	31.0500	31.0500
Pc bar	0.0000	0.0000	73.8152	73.8152
Std. sp gr. wtr = 1	2.775	2.772	1.052	0.827
Std. sp gr. air = 1	3.152	3.164	1.804	1.520
Degree API	-80.5007	-80.4507	3.0465	39.6004
Average mol wt	91.2850	91.6407	52.2450	44.0100
Actual dens kg/m3	2772.6953	2730.8848	1.3787	0.9592
Actual vol m3/h	1299.4797	2168.0842	4405256.0000	4404579.0000
Std liq m3/h	1298.6143	2136.0601	5775.0303	5108.7866
Std vap 0 C m3/h	884677.1875	1448116.2500	2605586.7500	2151710.7500

- - Vapor only - -

Molar flow kmol/h			96000.0000	96000.0000
Mass flow kg/h			4224960.5000	4224960.5000
Average mol wt			44.0100	44.0100
Actual dens kg/m3			0.9592	0.9592
Actual vol m3/h			4404579.0000	4404579.0000
Std liq m3/h			5108.7866	5108.7866
Std vap 0 C m3/h			2151710.7500	2151710.7500
Cp J/kmol-K			55426.8164	55426.8164
Z factor			1.0006	1.0006
Visc Pa-sec			4.269e-005	4.269e-005
Th cond W/m-K			0.0738	0.0738

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	4224960.5000	4224960.5000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	442677.0000	695326.0000	0.3400	0.0000
CaO_inerte	0.0000	0.0000	227112.0000	0.0000
CaCO3_Perry	3160384.2500	5225461.5000	1621408.7500	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	73	74	75	76
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Name

- - Overall - -

Molar flow kmol/h	48600.0000	48600.0000	48600.0000	48600.0000
Mass flow kg/h	2138885.2500	2138885.2500	2138885.2500	2138885.2500
Temp C	70.0000	149.7149	70.0000	150.3947
Pres bar	2.3700	5.6169	5.6169	13.3120
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-1.9045E+007	-1.8888E+007	-1.9050E+007	-1.8895E+007
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100

Actual dens kg/m3	3.6830	7.0845	8.8177	16.9327
Actual vol m3/h	580738.1875	301911.9063	242565.9375	126316.5938
Std liq m3/h	2586.3218	2586.3218	2586.3218	2586.3218
Std vap 0 C m3/h	1089302.8750	1089302.8750	1089302.8750	1089302.8750
- - Vapor only - -				
Molar flow kmol/h	48600.0000	48600.0000	48600.0000	48600.0000
Mass flow kg/h	2138885.2500	2138885.2500	2138885.2500	2138885.2500
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	3.6830	7.0845	8.8177	16.9327
Actual vol m3/h	580738.1875	301911.9063	242565.9375	126316.5938
Std liq m3/h	2586.3218	2586.3218	2586.3218	2586.3218
Std vap 0 C m3/h	1089302.8750	1089302.8750	1089302.8750	1089302.8750
Cp J/kmol-K	39773.7031	42964.5000	40335.1289	43844.2266
Z factor	0.9927	0.9926	0.9827	0.9827
Visc Pa-sec	1.707e-005	2.057e-005	1.707e-005	2.087e-005
Th cond W/m-K	0.0202	0.0268	0.0204	0.0273

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	2138885.2500	2138885.2500	2138885.2500	2138885.2500
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	77	78	79	80
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Name

- - Overall - -

Molar flow kmol/h	48600.0000	16200.0000	48600.0000	48600.0000
Mass flow kg/h	2138885.2500	712962.0000	2138885.2500	2138885.2500
Temp C	70.0000	-0.6685	151.8888	70.0000
Pres bar	13.3120	33.0000	31.5496	31.5496
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-1.9062E+007	-6.4228E+006	-1.8910E+007	-1.9093E+007
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	21.4231	88.4249	40.9265	54.1174
Actual vol m3/h	99840.1875	8062.9106	52261.6367	39523.0391
Std liq m3/h	2586.3218	862.1075	2586.3218	2586.3218
Std vap 0 C m3/h	1089302.8750	363101.0938	1089302.8750	1089302.8750
- - Vapor only - -				
Molar flow kmol/h	48600.0000	16200.0000	48600.0000	48600.0000
Mass flow kg/h	2138885.2500	712962.0000	2138885.2500	2138885.2500
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	21.4231	88.4249	40.9265	54.1174
Actual vol m3/h	99840.1875	8062.9106	52261.6367	39523.0391
Std liq m3/h	2586.3218	862.1075	2586.3218	2586.3218
Std vap 0 C m3/h	1089302.8750	363101.0938	1089302.8750	1089302.8750
Cp J/kmol-K	41794.4258	59816.4453	45978.2969	46179.1992
Z factor	0.9586	0.7251	0.9602	0.8994
Visc Pa-sec	1.741e-005	1.544e-005	2.136e-005	1.803e-005
Th cond W/m-K	0.0210	0.0187	0.0285	0.0225

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	2138885.2500	712962.0000	2138885.2500	2138885.2500
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	81	82	83	84
Name				

- - Overall - -

Molar flow kmol/h	48600.0000	48600.0000	16200.0000	16200.0000
Mass flow kg/h	2138885.2500	2138885.2500	712962.0000	712962.0000
Temp C	154.5640	70.0000	7.0000	7.0000
Pres bar	74.7724	74.7724	25.0000	13.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/h	-1.8950E+007	-1.9181E+007	-6.4067E+006	-6.3958E+006
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	101.3639	154.9090	57.0637	26.7956
Actual vol m3/h	21101.0625	13807.3691	12494.1377	26607.4551
Std liq m3/h	2586.3218	2586.3218	862.1075	862.1075
Std vap 0 C m3/h	1089302.8750	1089302.8750	363101.0938	363101.0938

- - Vapor only - -

Molar flow kmol/h	48600.0000	48600.0000	16200.0000	16200.0000
Mass flow kg/h	2138885.2500	2138885.2500	712962.0000	712962.0000
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	101.3639	154.9090	57.0637	26.7956
Actual vol m3/h	21101.0625	13807.3691	12494.1377	26607.4551
Std liq m3/h	2586.3218	2586.3218	862.1075	862.1075
Std vap 0 C m3/h	1089302.8750	1089302.8750	363101.0938	363101.0938
Cp J/kmol-K	51712.8164	66959.3125	47303.9492	40540.4805
Z factor	0.9130	0.7447	0.8279	0.9168
Visc Pa-sec	2.281e-005	2.059e-005	1.512e-005	1.453e-005
Th cond W/m-K	0.0317	0.0276	0.0177	0.0163

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	2138885.2500	2138885.2500	712962.0000	712962.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	85	86	87	88
Name				

- - Overall - -

Molar flow kmol/h	349708.5625	16200.0000	69941.7188	179850.0000
Mass flow kg/h	6300000.0000	712962.0000	1260000.0000	3240000.0000
Temp C	<b>60.0000</b>	7.0000	60.0000	60.0000
Pres bar	<b>4.0000</b>	6.0000	4.0000	4.0000

Vapor mole fraction	0.0000	1.000	0.0000	0.0000
Enth MJ/h	-9.9101E+007	-6.3902E+006	-1.9820E+007	-5.0966E+007
Tc C	374.2000	31.0500	374.2000	374.2000
Pc bar	221.1823	73.8152	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	0.827	1.000	1.000
Std. sp gr. air = 1	0.622	1.520	0.622	0.622
Degree API	10.0000	39.6004	10.0000	10.0000
Average mol wt	18.0150	44.0100	18.0150	18.0150
Actual dens kg/m3	982.9359	11.7749	982.9359	982.9359
Actual vol m3/h	6409.3696	60549.1133	1281.8740	3296.2476
Std liq m3/h	6300.0088	862.1075	1260.0018	3240.0046
Std vap 0 C m3/h	7838244.5000	363101.0938	1567649.0000	4031097.5000
- - Vapor only - -				
Molar flow kmol/h		16200.0000		
Mass flow kg/h		712962.0000		
Average mol wt		44.0100		
Actual dens kg/m3		11.7749		
Actual vol m3/h		60549.1133		
Std liq m3/h		862.1075		
Std vap 0 C m3/h		363101.0938		
Cp J/kmol-K		38011.7969		
Z factor		0.9629		
Visc Pa-sec		1.428e-005		
Th cond W/m-K		0.0156		
- - Liquid only - -				
Molar flow kmol/h	349708.5625		69941.7188	179850.0000
Mass flow kg/h	6300000.0000		1260000.0000	3240000.0000
Average mol wt	18.0150		18.0150	18.0150
Actual dens kg/m3	982.9359		982.9359	982.9359
Actual vol m3/h	6409.3696		1281.8740	3296.2476
Std liq m3/h	6300.0088		1260.0018	3240.0046
Std vap 0 C m3/h	7838244.5000		1567649.0000	4031097.5000
Cp J/kmol-K	75526.2422		75526.2422	75526.2422
Z factor	0.0035		0.0035	0.0035
Visc Pa-sec	0.0004783		0.0004783	0.0004783
Th cond W/m-K	0.6474		0.6474	0.6474
Surf. tens. N/m	0.0660		0.0660	0.0660
Flow rates in kg/h				
Water	6300000.0000	0.0000	1260000.0000	3240000.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	712962.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	89	90	91	92
Name				
- - Overall - -				
Molar flow kmol/h	59950.0000	69941.7266	69941.7188	99916.7500
Mass flow kg/h	1080000.1250	1260000.1250	1260000.0000	1800000.2500
Temp C	60.0000	91.6097	94.4609	90.6552
Pres bar	4.0000	4.0000	4.0000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-1.6989E+007	-1.9653E+007	-1.9638E+007	-2.8083E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000

Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	963.7379	961.7600	964.3918
Actual vol m3/h	1098.7493	1307.4095	1310.0981	1866.4615
Std liq m3/h	1080.0016	1260.0018	1260.0018	1800.0026
Std vap 0 C m3/h	1343699.2500	1567649.1250	1567649.0000	2239498.7500
- - Liquid only - -				
Molar flow kmol/h	59950.0000	69941.7266	69941.7188	99916.7500
Mass flow kg/h	1080000.1250	1260000.1250	1260000.0000	1800000.2500
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	963.7379	961.7600	964.3918
Actual vol m3/h	1098.7493	1307.4095	1310.0981	1866.4615
Std liq m3/h	1080.0016	1260.0018	1260.0018	1800.0026
Std vap 0 C m3/h	1343699.2500	1567649.1250	1567649.0000	2239498.7500
Cp J/kmol-K	75526.2422	75918.7578	75984.1797	75918.7578
Z factor	0.0035	0.0033	0.0033	0.0033
Visc Pa-sec	0.0004783	0.0003092	0.0002990	0.0003128
Th cond W/m-K	0.6474	0.6716	0.6732	0.6711
Surf. tens. N/m	0.0660	0.0602	0.0597	0.0604

Flow rates in kg/h				
Water	1080000.1250	1260000.1250	1260000.0000	1800000.2500
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	93	94	95	96
Name				
- - Overall - -				
Molar flow kmol/h	239800.0000	59950.0000	49958.3789	349708.6250
Mass flow kg/h	4320000.5000	1080000.1250	900000.0000	6300000.5000
Temp C	92.0440	95.6082	83.4329	91.4269
Pres bar	4.0000	4.0000	4.0000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-6.7373E+007	-1.6827E+007	-1.4069E+007	-9.8269E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	963.4390	960.9536	969.2003	963.8634
Actual vol m3/h	4483.9375	1123.8837	928.6008	6536.1963
Std liq m3/h	4320.0063	1080.0016	900.0014	6300.0093
Std vap 0 C m3/h	5374797.0000	1343699.2500	1119749.5000	7838246.5000
- - Liquid only - -				
Molar flow kmol/h	239800.0000	59950.0000	49958.3789	349708.6250
Mass flow kg/h	4320000.5000	1080000.1250	900000.0000	6300000.5000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	963.4390	960.9536	969.2004	963.8634
Actual vol m3/h	4483.9375	1123.8837	928.6008	6536.1963
Std liq m3/h	4320.0063	1080.0016	900.0014	6300.0093
Std vap 0 C m3/h	5374797.0000	1343699.2500	1119749.5000	7838246.5000
Cp J/kmol-K	75951.4688	76016.8828	75820.6328	75951.4688
Z factor	0.0033	0.0033	0.0034	0.0033

Visc Pa-sec	0.0003076	0.0002950	0.0003421	0.0003099
Th cond W/m-K	0.6719	0.6738	0.6665	0.6715
Surf. tens. N/m	0.0601	0.0594	0.0617	0.0602

Flow rates in kg/h

Water	4320000.5000	1080000.1250	900000.0000	6300000.5000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	97	98	99	100
Name				

- - Overall - -

Molar flow kmol/h	49958.3789	349708.6250	349708.6250	349708.6250
Mass flow kg/h	900000.0000	6300000.5000	6300000.5000	6300000.5000
Temp C	60.0000	91.5993	60.0000	60.0000
Pres bar	4.0000	10.3000	7.3000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-1.4157E+007	-9.8264E+007	-9.9101E+007	-9.9101E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	963.7451	982.9359	982.9359
Actual vol m3/h	915.6245	6536.9995	6409.3706	6409.3706
Std liq m3/h	900.0014	6300.0093	6300.0093	6300.0093
Std vap 0 C m3/h	1119749.5000	7838246.5000	7838246.5000	7838246.5000

- - Liquid only - -

Molar flow kmol/h	49958.3789	349708.6250	349708.6250	349708.6250
Mass flow kg/h	900000.0000	6300000.5000	6300000.5000	6300000.5000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	963.7451	982.9359	982.9359
Actual vol m3/h	915.6245	6536.9995	6409.3706	6409.3706
Std liq m3/h	900.0014	6300.0093	6300.0093	6300.0093
Std vap 0 C m3/h	1119749.5000	7838246.5000	7838246.5000	7838246.5000
Cp J/kmol-K	75526.2422	75918.7578	75526.2422	75526.2422
Z factor	0.0035	0.0085	0.0064	0.0035
Visc Pa-sec	0.0004783	0.0003097	0.0004787	0.0004783
Th cond W/m-K	0.6474	0.6716	0.6474	0.6474
Surf. tens. N/m	0.0660	0.0602	0.0660	0.0660

Flow rates in kg/h

Water	900000.0000	6300000.5000	6300000.5000	6300000.5000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	101	102	103	104
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Name				
- - Overall - -				
Molar flow kmol/h	21279.5176	60750.0000	34445.2422	26304.7422
Mass flow kg/h	1942500.7500	5545562.5000	3144333.5000	2401228.5000
Temp C	49.9889	49.9954	49.9954	49.9954
Pres bar	1.0000	1.0000	1.0000	1.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-2.3206E+007	-6.6248E+007	-3.7563E+007	-2.8686E+007
Tc C	0.0000	0.0000	0.0000	0.0000
Pc bar	0.0000	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	2.775	2.775	2.775	2.775
Std. sp gr. air = 1	3.152	3.152	3.152	3.152
Degree API	-80.5007	-80.5007	-80.5007	-80.5007
Average mol wt	91.2850	91.2850	91.2850	91.2850
Actual dens kg/m3	2772.6958	2772.6956	2772.6953	2772.6956
Actual vol m3/h	700.5820	2000.0615	1134.0349	866.0267
Std liq m3/h	700.1155	1998.7297	1133.2797	865.4500
Std vap 0 C m3/h	476951.5625	1361628.8750	772043.5000	589585.2500

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	238658.4219	681336.0000	386317.0000	295018.3438
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	1703842.2500	4864226.5000	2758016.2500	2106210.2500
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	105	106	107	108
Name				
- - Overall - -				
Molar flow kmol/h	34445.2422	26304.7422	52209.1953	48600.0000
Mass flow kg/h	3144333.5000	2401228.5000	2297726.5000	2138885.2500
Temp C	784.5290	784.2310	900.0000	69.9889
Pres bar	1.0000	1.0000	1.0000	1.0000
Vapor mole fraction	0.0000	0.0000	1.000	1.000
Enth MJ/h	-3.4938E+007	-2.6682E+007	-1.8305E+007	-1.9043E+007
Tc C	0.0000	0.0000	31.0500	31.0500
Pc bar	0.0000	0.0000	73.8152	73.8152
Std. sp gr. wtr = 1	2.775	2.775	0.827	0.827
Std. sp gr. air = 1	3.152	3.152	1.520	1.520
Degree API	-80.5007	-80.5007	39.6004	39.6004
Average mol wt	91.2850	91.2850	44.0100	44.0100
Actual dens kg/m3	2733.2073	2733.2231	0.4511	1.5475
Actual vol m3/h	1150.4191	878.5336	5093270.5000	1382125.6250
Std liq m3/h	1133.2797	865.4500	2778.3914	2586.3218
Std vap 0 C m3/h	772043.5000	589585.2500	1170198.5000	1089302.8750
- - Vapor only - -				
Molar flow kmol/h			52209.1953	48600.0000
Mass flow kg/h			2297726.5000	2138885.2500
Average mol wt			44.0100	44.0100
Actual dens kg/m3			0.4511	1.5475
Actual vol m3/h			5093270.5000	1382125.6250
Std liq m3/h			2778.3914	2586.3218
Std vap 0 C m3/h			1170198.5000	1089302.8750
Cp J/kmol-K			56135.8398	39545.5391
Z factor			1.0003	0.9969
Visc Pa-sec			4.446e-005	1.707e-005
Th cond W/m-K			0.0772	0.0200

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	2297726.5000	2138885.2500
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	386317.0000	295018.3438	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	2758016.2500	2106210.2500	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	109	110	111	112
Name				
- - Overall - -				
Molar flow kmol/h	48600.0000	60750.0000	64608.6836	3858.6980
Mass flow kg/h	2138885.2500	5545562.5000	3623061.0000	375225.5313
Temp C	40.2733	784.4000	900.0000	<b>20.0000</b>
Pres bar	1.0000	1.0000	1.0000	<b>1.0000</b>
Vapor mole fraction	1.000	0.0000	0.0000	0.0000
Enth MJ/h	-1.9099E+007	-6.1621E+007	-3.8100E+007	-4.5170E+006
Tc C	31.0500	0.0000	0.0000	0.0000
Pc bar	73.8152	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	0.827	2.775	3.297	2.732
Std. sp gr. air = 1	1.520	3.152	1.936	3.357
Degree API	39.6004	-80.5007	-88.5865	-79.7118
Average mol wt	44.0100	91.2850	56.0770	97.2415
Actual dens kg/m3	1.6962	2733.2139	3297.3225	2732.0266
Actual vol m3/h	1260997.7500	2028.9529	1098.7888	137.3433
Std liq m3/h	2586.3218	1998.7297	1098.7888	137.3306
Std vap 0 C m3/h	1089302.8750	1361628.8750	1448116.2500	86487.4922
- - Vapor only - -				
Molar flow kmol/h	48600.0000			
Mass flow kg/h	2138885.2500			
Average mol wt	44.0100			
Actual dens kg/m3	1.6962			
Actual vol m3/h	1260997.7500			
Std liq m3/h	2586.3218			
Std vap 0 C m3/h	1089302.8750			
Cp J/kmol-K	38275.3711			
Z factor	0.9958			
Visc Pa-sec	1.570e-005			
Th cond W/m-K	0.0177			

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	2138885.2500	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	681336.0000	3623061.0000	13990.5391
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	4864226.5000	0.0000	361235.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	113	114	115	116
Name				
- - Overall - -				
Molar flow kmol/h	3858.6980	48600.0000	96000.0000	16200.0000
Mass flow kg/h	375225.5313	2138885.2500	4224960.5000	712962.0000

Temp C	405.1736	43.7133	<b>287.0000</b>	-46.3819
Pres bar	1.0000	74.7724	2.0000	2.0000
Vapor mole fraction	0.0000	1.000	1.000	1.000
Enth MJ/h	-4.3640E+006	-1.9286E+007	-3.6715E+007	-6.4179E+006
Tc C	0.0000	31.0500	31.0500	31.0500
Pc bar	0.0000	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	2.732	0.827	0.827	0.827
Std. sp gr. air = 1	3.357	1.520	1.520	1.520
Degree API	-79.7118	39.6004	39.6004	39.6004
Average mol wt	97.2415	44.0100	44.0100	44.0100
Actual dens kg/m3	2710.0203	208.2247	1.8910	4.7797
Actual vol m3/h	138.4586	10272.0068	2234291.5000	149163.3438
Std liq m3/h	137.3306	2586.3218	5108.7866	862.1075
Std vap 0 C m3/h	86487.4922	1089302.8750	2151710.5000	363101.0938
- - Vapor only - -				
Molar flow kmol/h		48600.0000	96000.0000	16200.0000
Mass flow kg/h		2138885.2500	4224960.5000	712962.0000
Average mol wt		44.0100	44.0100	44.0100
Actual dens kg/m3		208.2247	1.8910	4.7797
Actual vol m3/h		10272.0068	2234291.5000	149163.3438
Std liq m3/h		2586.3218	5108.7866	862.1075
Std vap 0 C m3/h		1089302.8750	2151710.5000	363101.0938
Cp J/kmol-K		109259.3672	46288.0977	34238.6289
Z factor		0.6000	0.9996	0.9768
Visc Pa-sec		2.114e-005	2.601e-005	1.143e-005
Th cond W/m-K		0.0285	0.0377	0.0113

Flow rates in kg/h

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	2138885.2500	4224960.5000	712962.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	13990.5391	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	361235.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	117	118	119	120
Name				

- - Overall - -

Molar flow kmol/h	13522.9512	16200.0000	229309.0000	96000.0000
Mass flow kg/h	1234442.5000	712962.0000	4131000.0000	4224960.5000
Temp C	40.0000	7.0000	<b>12.0000</b>	717.0000
Pres bar	2.0000	2.0000	<b>1.2000</b>	2.0000
Vapor mole fraction	0.0000	1.000	0.0000	1.000
Enth MJ/h	-1.4759E+007	-6.3872E+006	-6.5812E+007	-3.4627E+007
Tc C	0.0000	31.0500	374.2000	31.0500
Pc bar	0.0000	73.8152	221.1823	73.8152
Std. sp gr. wtr = 1	2.775	0.827	1.000	0.827
Std. sp gr. air = 1	3.152	1.520	0.622	1.520
Degree API	-80.5007	39.6004	10.0000	39.6004
Average mol wt	91.2850	44.0100	18.0150	44.0100
Actual dens kg/m3	2773.2322	3.8258	999.1457	1.0687
Actual vol m3/h	445.1277	186354.2188	4134.5322	3953435.5000
Std liq m3/h	444.9173	862.1075	4131.0054	5108.7866
Std vap 0 C m3/h	303098.6563	363101.0938	5139649.0000	2151710.7500
- - Vapor only - -				
Molar flow kmol/h		16200.0000		96000.0000
Mass flow kg/h		712962.0000		4224960.5000
Average mol wt		44.0100		44.0100

Actual dens kg/m3	3.8258	1.0687
Actual vol m3/h	186354.2188	3953435.5000
Std liq m3/h	862.1075	5108.7866
Std vap 0 C m3/h	363101.0938	2151710.7500
Cp J/kmol-K	36837.5820	54059.1172
Z factor	0.9879	1.0006
Visc Pa-sec	1.410e-005	3.967e-005
Th cond W/m-K	0.0153	0.0676
- - Liquid only - -		
Molar flow kmol/h	229309.0000	
Mass flow kg/h	4131000.0000	
Average mol wt	18.0150	
Actual dens kg/m3	999.1458	
Actual vol m3/h	4134.5322	
Std liq m3/h	4131.0054	
Std vap 0 C m3/h	5139649.0000	
Cp J/kmol-K	75395.4063	
Z factor	0.0012	
Visc Pa-sec	0.001253	
Th cond W/m-K	0.5869	
Surf. tens. N/m	0.0743	

Flow rates in kg/h				
Water	0.0000	0.0000	4131000.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	712962.0000	0.0000	4224960.5000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.2270	0.0000	0.0000	0.0000
CaO_inerte	151665.2969	0.0000	0.0000	0.0000
CaCO3_Perry	1082776.8750	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	121	122	123	124
Name				
- - Overall - -				
Molar flow kmol/h	20250.0000	16200.0000	67943.3828	54954.2109
Mass flow kg/h	1135559.3750	712962.0000	1224000.0000	990000.0000
Temp C	238.0756	60.0088	6.0099	12.0000
Pres bar	1.0000	74.0000	1.2000	1.2000
Vapor mole fraction	0.0000	1.000	0.0000	0.0000
Enth MJ/h	-1.2646E+007	-6.4045E+006	-1.9531E+007	-1.5772E+007
Tc C	0.0000	31.0500	374.2000	374.2000
Pc bar	0.0000	73.8152	221.1823	221.1823
Std. sp gr. wtr = 1	3.297	0.827	1.000	1.000
Std. sp gr. air = 1	1.936	1.520	0.622	0.622
Degree API	-88.5865	39.6004	10.0000	10.0000
Average mol wt	56.0770	44.0100	18.0150	18.0150
Actual dens kg/m3	3297.3230	166.4810	999.6747	999.1458
Actual vol m3/h	344.3882	4282.5420	1224.3982	990.8465
Std liq m3/h	344.3882	862.1075	1224.0017	990.0014
Std vap 0 C m3/h	453876.3750	363101.0938	1522859.0000	1231724.2500
- - Vapor only - -				
Molar flow kmol/h		16200.0000		
Mass flow kg/h		712962.0000		
Average mol wt		44.0100		
Actual dens kg/m3		166.4810		
Actual vol m3/h		4282.5420		
Std liq m3/h		862.1075		
Std vap 0 C m3/h		363101.0938		
Cp J/kmol-K		73733.7656		

Z factor	0.7063		
Visc Pa-sec	2.049e-005		
Th cond W/m-K	0.0274		
- - Liquid only - -			
Molar flow kmol/h	67943.3828	54954.2109	
Mass flow kg/h	1224000.0000	990000.0000	
Average mol wt	18.0150	18.0150	
Actual dens kg/m3	999.6748	999.1458	
Actual vol m3/h	1224.3982	990.8465	
Std liq m3/h	1224.0017	990.0014	
Std vap 0 C m3/h	1522859.0000	1231724.2500	
Cp J/kmol-K	75395.4063	75395.4063	
Z factor	0.0012	0.0012	
Visc Pa-sec	0.001462	0.001253	
Th cond W/m-K	0.5773	0.5869	
Surf. tens. N/m	0.0754	0.0743	

Flow rates in kg/h				
Water	0.0000	0.0000	1224000.0000	990000.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	712962.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	908447.0000	0.0000	0.0000	0.0000
CaO_inerte	227112.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	125	126	127	128
Name				
- - Overall - -				
Molar flow kmol/h	16200.0000	16200.0000	54954.2109	180449.6406
Mass flow kg/h	712962.0000	712962.0000	990000.0000	3250800.2500
Temp C	7.0000	-11.7113	6.0072	6.0185
Pres bar	33.0000	25.0000	1.2000	1.2000
Vapor mole fraction	1.000	1.000	0.0000	0.0000
Enth MJ/h	-6.4156E+006	-6.4216E+006	-1.5797E+007	-5.1871E+007
Tc C	31.0500	31.0500	374.2000	374.2000
Pc bar	73.8152	73.8152	221.1823	221.1823
Std. sp gr. wtr = 1	0.827	0.827	1.000	1.000
Std. sp gr. air = 1	1.520	1.520	0.622	0.622
Degree API	39.6004	39.6004	10.0000	10.0000
Average mol wt	44.0100	44.0100	18.0150	18.0150
Actual dens kg/m3	82.2954	65.5005	999.6749	999.6744
Actual vol m3/h	8663.4453	10884.8369	990.3220	3251.8591
Std liq m3/h	862.1075	862.1075	990.0014	3250.8047
Std vap 0 C m3/h	363101.0938	363101.0938	1231724.2500	4044534.5000
- - Vapor only - -				
Molar flow kmol/h	16200.0000	16200.0000		
Mass flow kg/h	712962.0000	712962.0000		
Average mol wt	44.0100	44.0100		
Actual dens kg/m3	82.2954	65.5005		
Actual vol m3/h	8663.4453	10884.8369		
Std liq m3/h	862.1075	862.1075		
Std vap 0 C m3/h	363101.0938	363101.0938		
Cp J/kmol-K	55572.2070	51355.0391		
Z factor	0.7578	0.7729		
Visc Pa-sec	1.567e-005	1.437e-005		
Th cond W/m-K	0.0189	0.0167		
- - Liquid only - -				
Molar flow kmol/h			54954.2109	180449.6406

Mass flow kg/h	990000.0000	3250800.2500
Average mol wt	18.0150	18.0150
Actual dens kg/m3	999.6750	999.6744
Actual vol m3/h	990.3220	3251.8591
Std liq m3/h	990.0014	3250.8047
Std vap 0 C m3/h	1231724.2500	4044534.5000
Cp J/kmol-K	75428.1172	75395.4063
Z factor	0.0012	0.0012
Visc Pa-sec	0.001462	0.001462
Th cond W/m-K	0.5773	0.5773
Surf. tens. N/m	0.0754	0.0754

Flow rates in kg/h

Water	0.0000	0.0000	990000.0000	3250800.2500
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	712962.0000	712962.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	129	130	131	132
Name				

- - Overall - -

Molar flow kmol/h	16200.0000	16200.0000	15886.7520	229309.0000
Mass flow kg/h	712962.0000	712962.0000	286200.0000	4131000.0000
Temp C	-32.2366	-34.1400	6.0185	6.0177
Pres bar	13.0000	6.0000	1.2000	1.2000
Vapor mole fraction	1.000	1.000	0.0000	0.0000
Enth MJ/h	-6.4216E+006	-6.4150E+006	-4.5667E+006	-6.5916E+007
Tc C	31.0500	31.0500	374.2000	374.2000
Pc bar	73.8152	73.8152	221.1823	221.1823
Std. sp gr. wtr = 1	0.827	0.827	1.000	1.000
Std. sp gr. air = 1	1.520	1.520	0.622	0.622
Degree API	39.6004	39.6004	10.0000	10.0000
Average mol wt	44.0100	44.0100	18.0150	18.0150
Actual dens kg/m3	33.2093	14.1615	999.6744	999.6744
Actual vol m3/h	21468.7480	50344.9219	286.2931	4132.3457
Std liq m3/h	862.1075	862.1075	286.2002	4131.0054
Std vap 0 C m3/h	363101.0938	363101.0938	356080.0313	5139649.0000

- - Vapor only - -

Molar flow kmol/h	16200.0000	16200.0000
Mass flow kg/h	712962.0000	712962.0000
Average mol wt	44.0100	44.0100
Actual dens kg/m3	33.2093	14.1615
Actual vol m3/h	21468.7480	50344.9219
Std liq m3/h	862.1075	862.1075
Std vap 0 C m3/h	363101.0938	363101.0938
Cp J/kmol-K	41328.4219	36630.7070
Z factor	0.8602	0.9384
Visc Pa-sec	1.270e-005	1.227e-005
Th cond W/m-K	0.0137	0.0126

- - Liquid only - -

Molar flow kmol/h	15886.7520	229309.0000
Mass flow kg/h	286200.0000	4131000.0000
Average mol wt	18.0150	18.0150
Actual dens kg/m3	999.6744	999.6744
Actual vol m3/h	286.2931	4132.3457
Std liq m3/h	286.2002	4131.0054

Std vap 0 C m3/h	356080.0313	5139649.0000
Cp J/kmol-K	75395.4063	75428.1172
Z factor	0.0012	0.0012
Visc Pa-sec	0.001462	0.001462
Th cond W/m-K	0.5773	0.5773
Surf. tens. N/m	0.0754	0.0754

Flow rates in kg/h

Water	0.0000	0.0000	286200.0000	4131000.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	712962.0000	712962.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	133	134	135	136
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Name

- - Overall - -

Molar flow kmol/h	67943.3828	106411.3203	57552.0000	57552.0000
Mass flow kg/h	1224000.0000	1917000.0000	1036800.0000	1036800.0000
Temp C	12.0000	12.0000	12.0000	6.0386
Pres bar	1.2000	1.2000	1.2000	1.2000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-1.9500E+007	-3.0540E+007	-1.6518E+007	-1.6543E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.1458	999.1458	999.1458	999.6733
Actual vol m3/h	1225.0465	1918.6389	1037.6864	1037.1389
Std liq m3/h	1224.0017	1917.0026	1036.8014	1036.8014
Std vap 0 C m3/h	1522859.0000	2385066.0000	1289951.1250	1289951.1250

- - Liquid only - -

Molar flow kmol/h	67943.3828	106411.3203	57552.0000	57552.0000
Mass flow kg/h	1224000.0000	1917000.0000	1036800.0000	1036800.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.1458	999.1458	999.1458	999.6733
Actual vol m3/h	1225.0465	1918.6389	1037.6864	1037.1389
Std liq m3/h	1224.0017	1917.0026	1036.8014	1036.8014
Std vap 0 C m3/h	1522859.0000	2385066.0000	1289951.1250	1289951.1250
Cp J/kmol-K	75395.4063	75395.4063	75395.4063	75395.4063
Z factor	0.0012	0.0012	0.0012	0.0012
Visc Pa-sec	0.001253	0.001253	0.001253	0.001461
Th cond W/m-K	0.5869	0.5869	0.5869	0.5773
Surf. tens. N/m	0.0743	0.0743	0.0743	0.0754

Flow rates in kg/h

Water	1224000.0000	1917000.0000	1036800.0000	1036800.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000

Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	137	138	139	140
Name				
- - Overall - -				
Molar flow kmol/h	32972.5273	32972.5273	15886.7520	229309.0000
Mass flow kg/h	594000.0000	594000.0000	286200.0000	4131000.0000
Temp C	12.0000	6.0168	12.0000	12.0000
Pres bar	1.2000	1.2000	1.2000	1.2000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-9.4632E+006	-9.4781E+006	-4.5595E+006	-6.5812E+007
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.1458	999.6746	999.1458	999.1457
Actual vol m3/h	594.5079	594.1934	286.4445	4134.5322
Std liq m3/h	594.0009	594.0009	286.2002	4131.0054
Std vap 0 C m3/h	739034.5625	739034.5625	356080.0313	5139649.0000
- - Liquid only - -				
Molar flow kmol/h	32972.5273	32972.5273	15886.7520	229309.0000
Mass flow kg/h	594000.0000	594000.0000	286200.0000	4131000.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.1458	999.6746	999.1458	999.1458
Actual vol m3/h	594.5079	594.1934	286.4445	4134.5322
Std liq m3/h	594.0009	594.0009	286.2002	4131.0054
Std vap 0 C m3/h	739034.5625	739034.5625	356080.0313	5139649.0000
Cp J/kmol-K	75395.4063	75428.1172	75395.4063	75395.4063
Z factor	0.0012	0.0012	0.0012	0.0012
Visc Pa-sec	0.001253	0.001462	0.001253	0.001253
Th cond W/m-K	0.5869	0.5773	0.5869	0.5869
Surf. tens. N/m	0.0743	0.0754	0.0743	0.0743
Flow rates in kg/h				
Water	594000.0000	594000.0000	286200.0000	4131000.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	141	142	143	144
Name				
- - Overall - -				
Molar flow kmol/h	6727.0503	20250.0000	99916.7500	69941.7266
Mass flow kg/h	614079.0000	1848521.0000	1800000.2500	1260000.1250
Temp C	27.0000	35.6894	60.0000	60.0000
Pres bar	2.0000	2.0000	4.0000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-7.3496E+006	-2.2108E+007	-2.8315E+007	-1.9820E+007
Tc C	0.0000	0.0000	374.2000	374.2000
Pc bar	0.0000	0.0000	221.1823	221.1823
Std. sp gr. wtr = 1	2.775	2.775	1.000	1.000
Std. sp gr. air = 1	3.152	3.152	0.622	0.622
Degree API	-80.5007	-80.5007	10.0000	10.0000
Average mol wt	91.2850	91.2850	18.0150	18.0150

Actual dens kg/m3	2773.9299	2773.4634	982.9359	982.9359
Actual vol m3/h	221.3750	666.5027	1831.2488	1281.8741
Std liq m3/h	221.3260	666.2433	1800.0026	1260.0018
Std vap 0 C m3/h	150777.7344	453876.3750	2239498.7500	1567649.1250
- - Liquid only - -				
Molar flow kmol/h			99916.7500	69941.7266
Mass flow kg/h			1800000.2500	1260000.1250
Average mol wt			18.0150	18.0150
Actual dens kg/m3			982.9359	982.9359
Actual vol m3/h			1831.2488	1281.8741
Std liq m3/h			1800.0026	1260.0018
Std vap 0 C m3/h			2239498.7500	1567649.1250
Cp J/kmol-K			75526.2422	75526.2422
Z factor			0.0035	0.0035
Visc Pa-sec			0.0004783	0.0004783
Th cond W/m-K			0.6474	0.6474
Surf. tens. N/m			0.0660	0.0660
Flow rates in kg/h				
Water	0.0000	0.0000	1800000.2500	1260000.1250
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.1129	0.3400	0.0000	0.0000
CaO_inerte	75446.5547	227112.0000	0.0000	0.0000
CaCO3_Perry	538632.0000	1621408.7500	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	145	146	147	148
Name				
- - Overall - -				
Molar flow kmol/h	60750.0000	48600.0000	3609.2102	3609.2102
Mass flow kg/h	3406677.2500	2138885.2500	158841.3281	158841.3281
Temp C	900.0000	900.0000	900.0000	40.0000
Pres bar	1.0000	1.0000	1.0000	1.0000
Vapor mole fraction	0.0000	1.000	1.000	1.000
Enth MJ/h	-3.5825E+007	-1.7039E+007	-1.2654E+006	-1.4184E+006
Tc C	0.0000	31.0500	31.0500	31.0500
Pc bar	0.0000	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	3.297	0.827	0.827	0.827
Std. sp gr. air = 1	1.936	1.520	1.520	1.520
Degree API	-88.5865	39.6004	39.6004	39.6004
Average mol wt	56.0770	44.0100	44.0100	44.0100
Actual dens kg/m3	3297.3228	0.4511	0.4511	1.6977
Actual vol m3/h	1033.1646	4741173.5000	352096.6875	93563.4219
Std liq m3/h	1033.1646	2586.3218	192.0696	192.0696
Std vap 0 C m3/h	1361628.8750	1089302.8750	80895.5625	80895.5625
- - Vapor only - -				
Molar flow kmol/h		48600.0000	3609.2102	3609.2102
Mass flow kg/h		2138885.2500	158841.3281	158841.3281
Average mol wt		44.0100	44.0100	44.0100
Actual dens kg/m3		0.4511	0.4511	1.6977
Actual vol m3/h		4741173.5000	352096.6875	93563.4219
Std liq m3/h		2586.3218	192.0696	192.0696
Std vap 0 C m3/h		1089302.8750	80895.5625	80895.5625
Cp J/kmol-K		56135.8398	56135.8398	38209.9648
Z factor		1.0003	1.0003	0.9958
Visc Pa-sec		4.446e-005	4.446e-005	1.568e-005
Th cond W/m-K		0.0772	0.0772	0.0176

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	213885.2500	158841.3281	158841.3281
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	3406677.2500	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	149	150	151	152
Name				
- - Overall - -				
Molar flow kmol/h	3858.6980	3858.6980	3858.6980	3858.6970
Mass flow kg/h	375225.5313	216384.0000	216384.0000	375225.4375
Temp C	620.6476	900.0000	425.1736	<b>20.0000</b>
Pres bar	1.0000	1.0000	1.0000	<b>1.0000</b>
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/h	-4.2667E+006	-2.2755E+006	-2.3728E+006	-4.5170E+006
Tc C	0.0000	0.0000	0.0000	0.0000
Pc bar	0.0000	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	2.732	3.297	3.297	2.732
Std. sp gr. air = 1	3.357	1.936	1.936	3.357
Degree API	-79.7118	-88.5865	-88.5865	-79.7118
Average mol wt	97.2415	56.0770	56.0770	97.2415
Actual dens kg/m3	2697.7048	3297.3228	3297.3228	2732.0269
Actual vol m3/h	139.0907	65.6242	65.6242	137.3432
Std liq m3/h	137.3306	65.6242	65.6242	137.3305
Std vap 0 C m3/h	86487.4922	86487.4922	86487.4922	86487.4688

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	13990.5391	216384.0000	216384.0000	13990.5391
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	361235.0000	0.0000	0.0000	361235.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	153	154	155	156
Name				
- - Overall - -				
Molar flow kmol/h	3609.2100	3858.6970	3858.6980	3858.6970
Mass flow kg/h	158841.3125	375225.4375	216384.0000	375225.4375
Temp C	40.0000	405.1727	425.1727	620.6480
Pres bar	1.0000	1.0000	1.0000	1.0000
Vapor mole fraction	1.000	0.0000	0.0000	0.0000
Enth MJ/h	-1.4184E+006	-4.3640E+006	-2.3728E+006	-4.2667E+006
Tc C	31.0500	0.0000	0.0000	0.0000
Pc bar	73.8152	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	0.827	2.732	3.297	2.732
Std. sp gr. air = 1	1.520	3.357	1.936	3.357
Degree API	39.6004	-79.7118	-88.5865	-79.7118
Average mol wt	44.0100	97.2415	56.0770	97.2415
Actual dens kg/m3	1.6977	2710.0208	3297.3228	2697.7048
Actual vol m3/h	93563.4141	138.4585	65.6242	139.0906
Std liq m3/h	192.0696	137.3305	65.6242	137.3305

Std vap 0 C m3/h	80895.5625	86487.4688	86487.4922	86487.4688
- - Vapor only - -				
Molar flow kmol/h	3609.2100			
Mass flow kg/h	158841.3125			
Average mol wt	44.0100			
Actual dens kg/m3	1.6977			
Actual vol m3/h	93563.4141			
Std liq m3/h	192.0696			
Std vap 0 C m3/h	80895.5625			
Cp J/kmol-K	38209.9648			
Z factor	0.9958			
Visc Pa-sec	1.568e-005			
Th cond W/m-K	0.0176			

Flow rates in kg/h				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	158841.3125	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	13990.5391	216384.0000	13990.5391
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	361235.0000	0.0000	361235.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

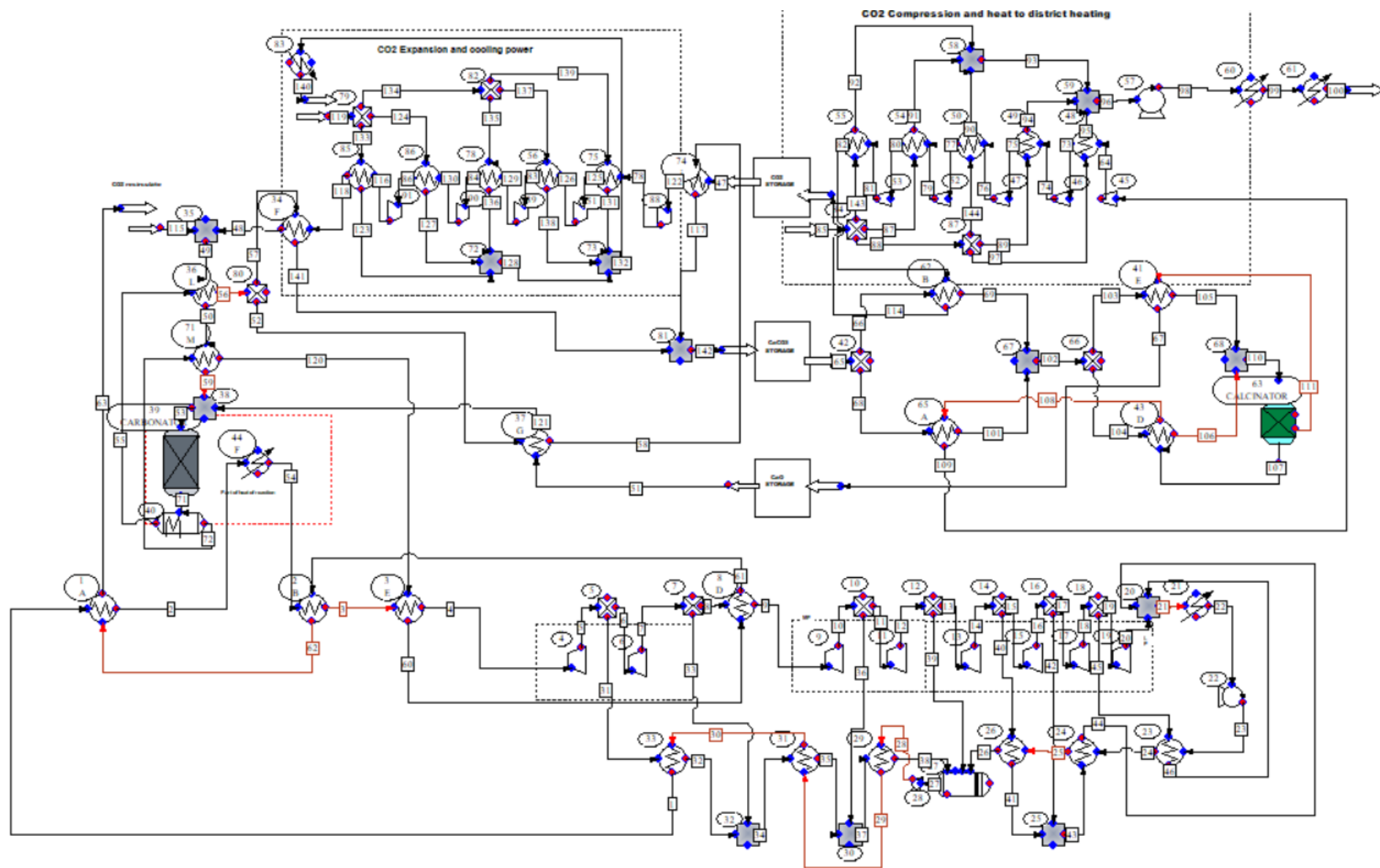
Stream No.	157	158	159
Name			

- - Overall - -			
Molar flow kmol/h	7467.9077	3858.6980	3609.2100
Mass flow kg/h	375225.5313	216384.0000	158841.3125
Temp C	900.0000	900.0000	900.0000
Pres bar	1.0000	1.0000	1.0000
Vapor mole fraction	1.000	0.0000	1.000
Enth MJ/h	-3.5409E+006	-2.2755E+006	-1.2654E+006
Tc C	31.0500	0.0000	31.0500
Pc bar	73.8152	0.0000	73.8152
Std. sp gr. wtr = 1	1.456	3.297	0.827
Std. sp gr. air = 1	1.735	1.936	1.520
Degree API	-34.3221	-88.5865	39.6004
Average mol wt	50.2451	56.0770	44.0100
Actual dens kg/m3	1.0655	3297.3228	0.4511
Actual vol m3/h	352162.2500	65.6242	352096.6563
Std liq m3/h	257.6938	65.6242	192.0696
Std vap 0 C m3/h	167383.0469	86487.4922	80895.5625
- - Vapor only - -			
Molar flow kmol/h	3609.2100		3609.2100
Mass flow kg/h	158841.3125		158841.3125
Average mol wt	44.0100		44.0100
Actual dens kg/m3	0.4511		0.4511
Actual vol m3/h	352096.6563		352096.6563
Std liq m3/h	192.0696		192.0696
Std vap 0 C m3/h	80895.5625		80895.5625
Cp J/kmol-K	56135.8398		56135.8398
Z factor	1.0003		1.0003
Visc Pa-sec	4.446e-005		4.446e-005
Th cond W/m-K	0.0772		0.0772

Flow rates in kg/h			
Water	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000
Carbon Dioxide	158841.3125	0.0000	158841.3125

Nitrogen	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000
CaO	216384.0000	216384.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000

CHEMCAD 7.1.2



## Integrated Solar Calcium Looping coupled with s-CO<sub>2</sub> Brayton power cycle

### STREAM PROPERTIES

Stream No.	1	2	3	4
Name				
- - Overall - -				
Molar flow kmol/s	60.0000	60.0000	60.0000	60.0000
Mass flow kg/s	2640.6001	2640.6001	2640.6001	2640.6001
Temp C	650.0000	499.5587	253.8496	112.9040
Pres bar	250.0000	78.0000	78.0000	78.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/s	-21866.	-22343.	-23096.	-23533.
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	132.8671	52.4041	80.1186	125.9390
Actual vol m3/h	71546.3672	181400.9688	118651.1719	75482.2734
Std liq m3/h	11494.7686	11494.7686	11494.7686	11494.7686
Std vap 0 C m3/h	4841348.0000	4841348.0000	4841348.0000	4841348.0000
- - Vapor only - -				
Molar flow kmol/s	60.0000	60.0000	60.0000	60.0000
Mass flow kg/s	2640.6001	2640.6001	2640.6001	2640.6001
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	132.8671	52.4041	80.1186	125.9390
Actual vol m3/h	71546.3672	181400.9688	118651.1719	75482.2734
Std liq m3/h	11494.7686	11494.7686	11494.7686	11494.7686
Std vap 0 C m3/h	4841348.0000	4841348.0000	4841348.0000	4841348.0000
Cp J/kmol-K	56124.0703	52334.2109	50253.3633	55943.1367
Z factor	1.0790	1.0198	0.9780	0.8493
Visc Pa-sec	4.067e-005	3.420e-005	2.627e-005	2.167e-005
Th cond W/m-K	0.0700	0.0560	0.0387	0.0296
Flow rates in kg/s				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	2640.6001	2640.6001	2640.6001	2640.6001
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	5	6	7	8
Name				
- - Overall - -				
Molar flow kmol/s	39.0000	60.0000	39.0000	39.0000
Mass flow kg/s	1716.3899	2640.6001	1716.3899	1716.3899
Temp C	51.0000	720.0000	112.8717	51.0000
Pres bar	118.9000	2.0000	78.0000	78.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/s	-15613.	-21632.	-15297.	-15458.
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6003	39.6004	39.6003	39.6003
Average mol wt	44.0100	44.0100	44.0100	44.0100

Actual dens kg/m3	476.9665	1.0655	125.9585	201.2038
Actual vol m3/h	12954.7969	8922182.0000	49055.8516	30710.1758
Std liq m3/h	7471.5981	11494.7686	7471.5981	7471.5981
Std vap 0 C m3/h	3146875.7500	4841348.0000	3146875.7500	3146875.7500
- - Vapor only - -				
Molar flow kmol/s	39.0000	60.0000	39.0000	39.0000
Mass flow kg/s	1716.3899	2640.6001	1716.3899	1716.3899
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	476.9665	1.0655	125.9585	201.2038
Actual vol m3/h	12954.7969	8922182.0000	49055.8516	30710.1758
Std liq m3/h	7471.5981	11494.7686	7471.5981	7471.5981
Std vap 0 C m3/h	3146875.7500	4841348.0000	3146875.7500	3146875.7500
Cp J/kmol-K	201419.2500	54058.9922	55883.3086	95108.0391
Z factor	0.4071	1.0006	0.8493	0.6331
Visc Pa-sec	3.514e-005	3.976e-005	2.167e-005	2.123e-005
Th cond W/m-K	0.0517	0.0678	0.0295	0.0286

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	1716.3899	2640.6001	1716.3899	1716.3899
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	9	10	11	12
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Name

- - Overall - -

Molar flow kmol/s	39.0000	39.0000	21.0000	21.0000
Mass flow kg/s	1716.3899	1716.3899	924.2100	924.2100
Temp C	86.5409	87.5260	112.8717	234.2240
Pres bar	118.9000	250.0000	78.0000	250.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/s	-15424.	-15566.	-8236.6	-8146.0
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6003	39.6003	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	257.5785	575.9096	125.9585	271.2019
Actual vol m3/h	23988.8184	10729.1201	26414.6914	12268.1875
Std liq m3/h	7471.5981	7471.5981	4023.1692	4023.1692
Std vap 0 C m3/h	3146875.7500	3146875.7500	1694471.8750	1694471.8750
- - Vapor only - -				
Molar flow kmol/s	39.0000	39.0000	21.0000	21.0000
Mass flow kg/s	1716.3899	1716.3899	924.2100	924.2100
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	257.5785	575.9096	125.9585	271.2019
Actual vol m3/h	23988.8184	10729.1201	26414.6914	12268.1875
Std liq m3/h	7471.5981	7471.5981	4023.1692	4023.1692
Std vap 0 C m3/h	3146875.7500	3146875.7500	1694471.8750	1694471.8750
Cp J/kmol-K	87711.3203	100622.6406	55883.3086	61582.0273
Z factor	0.6794	0.6372	0.8493	0.9618
Visc Pa-sec	2.499e-005	4.459e-005	2.167e-005	3.173e-005
Th cond W/m-K	0.0351	0.0655	0.0295	0.0481

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	1716.3899	1716.3899	924.2100	924.2100
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	13	14	15	16
Name				

- - Overall - -

Molar flow kmol/s	39.0000	60.0000	60.0000	60.0000
Mass flow kg/s	1716.3899	2640.6001	2640.6001	2640.5999
Temp C	233.8496	233.9809	511.9336	453.4763
Pres bar	250.0000	250.0000	2.0000	250.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/s	-15129.	-23275.	-22289.	-22523.
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6003	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	271.5175	271.4067	1.3480	170.7363
Actual vol m3/h	22757.2949	35025.5156	7052146.0000	55677.4492
Std liq m3/h	7471.5981	11494.7686	11494.7686	11494.7676
Std vap 0 C m3/h	3146875.7500	4841348.0000	4841348.0000	4841347.5000

- - Vapor only - -

Molar flow kmol/s	39.0000	60.0000	60.0000	60.0000
Mass flow kg/s	1716.3899	2640.6001	2640.6001	2640.5999
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	271.5175	271.4067	1.3480	170.7363
Actual vol m3/h	22757.2949	35025.5156	7052146.0000	55677.4492
Std liq m3/h	7471.5981	11494.7686	11494.7686	11494.7676
Std vap 0 C m3/h	3146875.7500	4841348.0000	4841348.0000	4841347.5000
Cp J/kmol-K	61559.5508	61544.3477	50939.2695	55450.4609
Z factor	0.9614	0.9616	1.0005	1.0668
Visc Pa-sec	3.173e-005	3.173e-005	3.366e-005	3.581e-005
Th cond W/m-K	0.0481	0.0481	0.0545	0.0588

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	1716.3899	2640.6001	2640.6001	2640.5999
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	47	48	49	50
Name				

- - Overall - -

Molar flow kmol/s	4.0000	4.0000	64.0000	64.0000
Mass flow kg/s	176.0400	176.0400	2816.6401	2816.6401
Temp C	20.0000	464.5302	508.1184	560.7081
Pres bar	<b>74.0000</b>	2.0000	2.0000	2.0000

Vapor mole fraction	0.0000	1.000	1.000	1.000
Enth MJ/s	-1618.2	-1495.5	-23787.	-23615.
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	773.9944	1.4347	1.3546	1.2691
Actual vol m3/h	818.7967	441720.1250	7485693.5000	7990058.0000
Std liq m3/h	766.3179	766.3179	12261.0859	12261.0859
Std vap 0 C m3/h	322756.5313	322756.5313	5164104.5000	5164104.5000
- - Vapor only - -				
Molar flow kmol/s		4.0000	64.0000	64.0000
Mass flow kg/s		176.0400	2816.6401	2816.6401
Average mol wt		44.0100	44.0100	44.0100
Actual dens kg/m3		1.4347	1.3546	1.2691
Actual vol m3/h		441720.1250	7485693.5000	7990058.0000
Std liq m3/h		766.3179	12261.0859	12261.0859
Std vap 0 C m3/h		322756.5313	5164104.5000	5164104.5000
Cp J/kmol-K		50096.3047	50939.5273	51783.7266
Z factor		1.0004	1.0005	1.0005
Visc Pa-sec		3.216e-005	3.354e-005	3.517e-005
Th cond W/m-K		0.0512	0.0543	0.0579
- - Liquid only - -				
Molar flow kmol/s	4.0000			
Mass flow kg/s	176.0400			
Average mol wt	44.0100			
Actual dens kg/m3	773.9944			
Actual vol m3/h	818.7967			
Std liq m3/h	766.3179			
Std vap 0 C m3/h	322756.5313			
Cp J/kmol-K	166886.7656			
Z factor	0.1939			
Visc Pa-sec	7.526e-005			
Th cond W/m-K	0.0823			
Surf. tens. N/m	0.0012			
Flow rates in kg/s				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	176.0400	176.0400	2816.6401	2816.6401
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	51	52	53	55
Name				
- - Overall - -				
Molar flow kmol/s	5.0000	3.3390	69.0000	5.0000
Mass flow kg/s	280.3850	304.8007	3097.0251	456.4250
Temp C	<b>20.0000</b>	528.1176	656.6367	830.0000
Pres bar	<b>1.0000</b>	2.0000	2.0000	2.0000
Vapor mole fraction	0.0000	0.0000	1.000	0.0000
Enth MJ/s	-3176.9	-3484.0	-26306.	-5044.4
Tc C	0.0000	0.0000	31.0500	0.0000
Pc bar	0.0000	0.0000	73.8152	0.0000
Std. sp gr. wtr = 1	3.297	2.775	0.887	2.775

Std. sp gr. air = 1	1.936	3.152	1.550	3.152
Degree API	-88.5865	-80.5007	27.9951	-80.5007
Average mol wt	56.0770	91.2850	44.8844	91.2850
Actual dens kg/m3	3297.3228	2747.0063	1.2513	2730.7583
Actual vol m3/h	306.1229	399.4466	8910024.0000	601.7120
Std liq m3/h	306.1229	395.4821	12567.2090	592.2164
Std vap 0 C m3/h	403445.6250	269421.0313	5567549.5000	403445.6875
- - Vapor only - -				
Molar flow kmol/s			64.0000	
Mass flow kg/s			2816.6401	
Average mol wt			44.0100	
Actual dens kg/m3			1.1381	
Actual vol m3/h			8909718.0000	
Std liq m3/h			12261.0859	
Std vap 0 C m3/h			5164104.5000	
Cp J/kmol-K			53280.1836	
Z factor			1.0006	
Visc Pa-sec			3.798e-005	
Th cond W/m-K			0.0640	

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	2816.6401	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	224.3080	0.0000	224.3080	0.0000
CaO_inerte	56.0770	37.4482	56.0770	56.0770
CaCO3_Perry	0.0000	267.3524	0.0000	400.3480
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	56	57	58	59
Name				

- - Overall - -

Molar flow kmol/s	5.0000	1.6610	3.3390	64.0000
Mass flow kg/s	456.4250	151.6244	304.8007	2816.6401
Temp C	528.1184	528.1176	159.9977	668.0910
Pres bar	2.0000	2.0000	2.0000	2.0000
Vapor mole fraction	0.0000	0.0000	0.0000	1.000
Enth MJ/s	-5217.1	-1733.1	-3607.8	-23253.
Tc C	0.0000	0.0000	0.0000	31.0500
Pc bar	0.0000	0.0000	0.0000	73.8152
Std. sp gr. wtr = 1	2.775	2.775	2.775	0.827
Std. sp gr. air = 1	3.152	3.152	3.152	1.520
Degree API	-80.5007	-80.5007	-80.5007	39.6004
Average mol wt	91.2850	91.2850	91.2850	44.0100
Actual dens kg/m3	2747.0063	2747.0063	2766.7903	1.1242
Actual vol m3/h	598.1530	198.7064	396.5904	9019506.0000
Std liq m3/h	592.2164	196.7343	395.4821	12261.0859
Std vap 0 C m3/h	403445.6875	134024.6406	269421.0313	5164104.5000
- - Vapor only - -				
Molar flow kmol/s				64.0000
Mass flow kg/s				2816.6401
Average mol wt				44.0100
Actual dens kg/m3				1.1242
Actual vol m3/h				9019506.0000
Std liq m3/h				12261.0859
Std vap 0 C m3/h				5164104.5000
Cp J/kmol-K				53408.8164
Z factor				1.0006
Visc Pa-sec				3.831e-005

Th cond W/m-K				0.0647
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Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	2816.6401
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	56.0770	18.6288	37.4482	0.0000
CaCO3_Perry	400.3480	132.9956	267.3524	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	64	65	66	67
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Name

- - Overall - -

Molar flow kmol/s	12.0000	15.0000	9.7458	15.0000
Mass flow kg/s	528.1200	1369.2749	889.6451	841.1550
Temp C	114.7999	<b>20.0000</b>	20.0000	70.0003
Pres bar	2.3700	<b>1.0000</b>	1.0000	1.0000
Vapor mole fraction	1.000	0.0000	0.0000	0.0000
Enth MJ/s	-4680.6	-16397.	-10654.	-9493.6
Tc C	31.0500	0.0000	0.0000	0.0000
Pc bar	73.8152	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	0.827	2.775	2.775	3.297
Std. sp gr. air = 1	1.520	3.152	3.152	1.936
Degree API	39.6004	-80.5007	-80.5007	-88.5865
Average mol wt	44.0100	91.2850	91.2850	56.0770
Actual dens kg/m3	3.2488	2774.3052	2774.3054	3297.3228
Actual vol m3/h	585203.6250	1776.8015	1154.4231	918.3687
Std liq m3/h	2298.9536	1776.6492	1154.3241	918.3687
Std vap 0 C m3/h	968269.6250	1210336.8750	786379.8750	1210337.0000

- - Vapor only - -

Molar flow kmol/s	12.0000
Mass flow kg/s	528.1200
Average mol wt	44.0100
Actual dens kg/m3	3.2488
Actual vol m3/h	585203.6250
Std liq m3/h	2298.9536
Std vap 0 C m3/h	968269.6250
Cp J/kmol-K	41507.2266
Z factor	0.9955
Visc Pa-sec	1.907e-005
Th cond W/m-K	0.0238

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	528.1200	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	168.2310	109.3030	841.1550
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	1201.0439	780.3420	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	68	69	71	72
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Name

- - Overall - -

Molar flow kmol/s	5.2542	9.7458	65.0000	60.0000
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Mass flow	kg/s	479.6299	889.6451	3097.0251	2640.6001
Temp	C	20.0000	50.0000	830.0000	830.0000
Pres	bar	1.0000	1.0000	2.0000	2.0000
Vapor mole fraction		0.0000	0.0000	1.000	1.000
Enth	MJ/s	-5743.6	-10628.	-26315.	-21271.
Tc	C	0.0000	0.0000	31.0500	31.0500
Pc	bar	0.0000	0.0000	73.8152	73.8152
Std. sp gr.	wtr = 1	2.775	2.775	0.922	0.827
Std. sp gr.	air = 1	3.152	3.152	1.645	1.520
Degree API		-80.5007	-80.5007	21.9004	39.6004
Average mol wt		91.2850	91.2850	47.6465	44.0100
Actual dens	kg/m3	2774.3054	2772.6953	1.1250	0.9592
Actual vol	m3/h	622.3784	1155.0934	9910904.0000	9910302.0000
Std liq	m3/h	622.3250	1154.3241	12086.9844	11494.7686
Std vap 0 C	m3/h	423957.0938	786379.8750	5244794.0000	4841348.0000
- - Vapor only - -					
Molar flow	kmol/s			60.0000	60.0000
Mass flow	kg/s			2640.6001	2640.6001
Average mol wt				44.0100	44.0100
Actual dens	kg/m3			0.9592	0.9592
Actual vol	m3/h			9910302.0000	9910302.0000
Std liq	m3/h			11494.7686	11494.7686
Std vap 0 C	m3/h			4841348.0000	4841348.0000
Cp	J/kmol-K			55426.8164	55426.8164
Z factor				1.0006	1.0006
Visc	Pa-sec			4.269e-005	4.269e-005
Th cond	W/m-K			0.0738	0.0738

Flow rates in kg/s					
Water		0.0000	0.0000	0.0000	0.0000
Methane		0.0000	0.0000	0.0000	0.0000
Carbon Dioxide		0.0000	0.0000	2640.6001	2640.6001
Nitrogen		0.0000	0.0000	0.0000	0.0000
Oxygen		0.0000	0.0000	0.0000	0.0000
Calcium Carbonat		0.0000	0.0000	0.0000	0.0000
CaO		58.9280	109.3030	0.0000	0.0000
CaO_inerte		0.0000	0.0000	56.0770	0.0000
CaCO3_Perry		420.7019	780.3420	400.3480	0.0000
Water_orange		0.0000	0.0000	0.0000	0.0000

Stream No.	73	74	75	76	
Name					
- - Overall - -					
Molar flow	kmol/s	12.0000	12.0000	12.0000	12.0000
Mass flow	kg/s	528.1200	528.1200	528.1200	528.1200
Temp	C	70.0000	149.7145	70.0000	150.3949
Pres	bar	2.3700	5.6169	5.6169	13.3120
Vapor mole fraction		1.000	1.000	1.000	1.000
Enth	MJ/s	-4702.4	-4663.7	-4703.7	-4665.4
Tc	C	31.0500	31.0500	31.0500	31.0500
Pc	bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr.	wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr.	air = 1	1.520	1.520	1.520	1.520
Degree API		39.6004	39.6004	39.6004	39.6004
Average mol wt		44.0100	44.0100	44.0100	44.0100
Actual dens	kg/m3	3.6830	7.0845	8.8177	16.9327
Actual vol	m3/h	516211.9688	268366.0313	215614.2500	112281.5313
Std liq	m3/h	2298.9536	2298.9536	2298.9536	2298.9536
Std vap 0 C	m3/h	968269.6250	968269.6250	968269.6250	968269.6250
- - Vapor only - -					
Molar flow	kmol/s	12.0000	12.0000	12.0000	12.0000
Mass flow	kg/s	528.1200	528.1200	528.1200	528.1200

Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	3.6830	7.0845	8.8177	16.9327
Actual vol m3/h	516211.9688	268366.0313	215614.2500	112281.5313
Std liq m3/h	2298.9536	2298.9536	2298.9536	2298.9536
Std vap 0 C m3/h	968269.6250	968269.6250	968269.6250	968269.6250
Cp J/kmol-K	39773.7031	43029.5313	40335.1289	43844.2305
Z factor	0.9927	0.9926	0.9827	0.9827
Visc Pa-sec	1.707e-005	2.057e-005	1.707e-005	2.087e-005
Th cond W/m-K	0.0202	0.0268	0.0204	0.0273

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	528.1200	528.1200	528.1200	528.1200
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No. 77 78 79 80

Name

- - Overall - -

Molar flow kmol/s	12.0000	4.0000	12.0000	12.0000
Mass flow kg/s	528.1200	176.0400	528.1200	528.1200
Temp C	70.0000	-2.1679	151.8900	70.0000
Pres bar	13.3120	33.0000	31.5496	31.5496
Vapor mole fraction	1.000	0.9992	1.000	1.000
Enth MJ/s	-4706.7	-1586.3	-4669.2	-4714.3
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	21.4231	89.8838	40.9263	54.1174
Actual vol m3/h	88746.8750	7050.7017	46454.9609	35131.6094
Std liq m3/h	2298.9536	766.3179	2298.9536	2298.9536
Std vap 0 C m3/h	968269.6250	322756.5313	968269.6250	968269.6250

- - Vapor only - -

Molar flow kmol/s	12.0000	3.9968	12.0000	12.0000
Mass flow kg/s	528.1200	175.8997	528.1200	528.1200
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	21.4231	89.8191	40.9263	54.1174
Actual vol m3/h	88746.8750	7050.1636	46454.9609	35131.6094
Std liq m3/h	2298.9536	765.7074	2298.9536	2298.9536
Std vap 0 C m3/h	968269.6250	322499.4063	968269.6250	968269.6250
Cp J/kmol-K	41794.4258	61031.2773	45978.4375	46179.1992
Z factor	0.9586	0.7178	0.9602	0.8994
Visc Pa-sec	1.741e-005	1.540e-005	2.136e-005	1.803e-005
Th cond W/m-K	0.0210	0.0186	0.0285	0.0225

- - Liquid only - -

Molar flow kmol/s	0.0032
Mass flow kg/s	0.1402
Average mol wt	44.0100
Actual dens kg/m3	938.6710
Actual vol m3/h	0.5379
Std liq m3/h	0.6105
Std vap 0 C m3/h	257.1252
Cp J/kmol-K	125907.3672

Z factor	0.0785
Visc Pa-sec	0.0001107
Th cond W/m-K	0.1087
Surf. tens. N/m	0.0049

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	528.1200	176.0400	528.1200	528.1200
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	81	82	83	84
Name				

- - Overall - -

Molar flow kmol/s	12.0000	12.0000	4.0000	4.0000
Mass flow kg/s	528.1200	528.1200	176.0400	176.0400
Temp C	154.5647	70.0000	7.0000	7.0000
Pres bar	74.7724	74.7724	25.0000	13.0000
Vapor mole fraction	1.000	1.000	1.000	1.000
Enth MJ/s	-4678.9	-4736.2	-1581.9	-1579.2
Tc C	31.0500	31.0500	31.0500	31.0500
Pc bar	73.8152	73.8152	73.8152	73.8152
Std. sp gr. wtr = 1	0.827	0.827	0.827	0.827
Std. sp gr. air = 1	1.520	1.520	1.520	1.520
Degree API	39.6004	39.6004	39.6004	39.6004
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	101.3636	154.9090	57.0637	26.7956
Actual vol m3/h	18756.5566	12273.2217	11105.9004	23651.0703
Std liq m3/h	2298.9536	2298.9536	766.3179	766.3179
Std vap 0 C m3/h	968269.6250	968269.6250	322756.5313	322756.5313

- - Vapor only - -

Molar flow kmol/s	12.0000	12.0000	4.0000	4.0000
Mass flow kg/s	528.1200	528.1200	176.0400	176.0400
Average mol wt	44.0100	44.0100	44.0100	44.0100
Actual dens kg/m3	101.3636	154.9090	57.0637	26.7956
Actual vol m3/h	18756.5566	12273.2217	11105.9004	23651.0703
Std liq m3/h	2298.9536	2298.9536	766.3179	766.3179
Std vap 0 C m3/h	968269.6250	968269.6250	322756.5313	322756.5313
Cp J/kmol-K	51777.2227	66959.3125	47303.9492	40540.4805
Z factor	0.9130	0.7447	0.8279	0.9168
Visc Pa-sec	2.281e-005	2.059e-005	1.512e-005	1.453e-005
Th cond W/m-K	0.0317	0.0276	0.0177	0.0163

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	528.1200	528.1200	176.0400	176.0400
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	85	86	87	88
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Name				
- - Overall - -				
Molar flow kmol/s	89.9251	4.0000	17.9850	46.2215
Mass flow kg/s	1620.0000	176.0400	324.0000	832.6800
Temp C	<b>60.0000</b>	7.0000	60.0000	60.0000
Pres bar	<b>4.0000</b>	6.0000	4.0000	4.0000
Vapor mole fraction	0.0000	1.000	0.0000	0.0000
Enth MJ/s	-25483.	-1577.8	-5096.5	-13098.
Tc C	374.2000	31.0500	374.2000	374.2000
Pc bar	221.1823	73.8152	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	0.827	1.000	1.000
Std. sp gr. air = 1	0.622	1.520	0.622	0.622
Degree API	10.0000	39.6004	10.0000	10.0000
Average mol wt	18.0150	44.0100	18.0150	18.0150
Actual dens kg/m3	982.9359	11.7749	982.9360	982.9359
Actual vol m3/h	5933.2451	53821.4336	1186.6490	3049.6880
Std liq m3/h	5832.0083	766.3179	1166.4016	2997.6519
Std vap 0 C m3/h	7255975.5000	322756.5313	1451195.1250	3729571.2500
- - Vapor only - -				
Molar flow kmol/s		4.0000		
Mass flow kg/s		176.0400		
Average mol wt		44.0100		
Actual dens kg/m3		11.7749		
Actual vol m3/h		53821.4336		
Std liq m3/h		766.3179		
Std vap 0 C m3/h		322756.5313		
Cp J/kmol-K		38011.7969		
Z factor		0.9629		
Visc Pa-sec		1.428e-005		
Th cond W/m-K		0.0156		
- - Liquid only - -				
Molar flow kmol/s	89.9251		17.9850	46.2215
Mass flow kg/s	1620.0000		324.0000	832.6800
Average mol wt	18.0150		18.0150	18.0150
Actual dens kg/m3	982.9359		982.9359	982.9359
Actual vol m3/h	5933.2451		1186.6490	3049.6880
Std liq m3/h	5832.0083		1166.4016	2997.6519
Std vap 0 C m3/h	7255975.5000		1451195.1250	3729571.2500
Cp J/kmol-K	75338.3750		75338.3750	75338.3750
Z factor	0.0035		0.0035	0.0035
Visc Pa-sec	0.0004783		0.0004783	0.0004783
Th cond W/m-K	0.6474		0.6474	0.6474
Surf. tens. N/m	0.0660		0.0660	0.0660
Flow rates in kg/s				
Water	1620.0000	0.0000	324.0000	832.6800
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	176.0400	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.				
	89	90	91	92
Name				
- - Overall - -				
Molar flow kmol/s	15.3918	17.9802	17.9850	25.7186
Mass flow kg/s	277.2824	323.9125	324.0000	463.3200
Temp C	60.0000	90.4352	93.1729	89.4794

Pres bar	4.0000	4.0000	4.0000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/s	-4361.7	-5053.8	-5051.5	-7230.8
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	964.5417	962.6581	965.1914
Actual vol m3/h	1015.5461	1208.9524	1211.6453	1728.1049
Std liq m3/h	998.2182	1166.0867	1166.4016	1667.9543
Std vap 0 C m3/h	1241947.2500	1450803.2500	1451195.1250	2075208.8750
- - Liquid only - -				
Molar flow kmol/s	15.3918	17.9802	17.9850	25.7186
Mass flow kg/s	277.2824	323.9125	324.0000	463.3200
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	964.5418	962.6581	965.1914
Actual vol m3/h	1015.5461	1208.9524	1211.6453	1728.1049
Std liq m3/h	998.2182	1166.0867	1166.4016	1667.9543
Std vap 0 C m3/h	1241947.2500	1450803.2500	1451195.1250	2075208.8750
Cp J/kmol-K	75338.3750	75744.4531	75798.0234	75726.4219
Z factor	0.0035	0.0033	0.0033	0.0033
Visc Pa-sec	0.0004783	0.0003136	0.0003035	0.0003172
Th cond W/m-K	0.6474	0.6709	0.6725	0.6704
Surf. tens. N/m	0.0660	0.0604	0.0599	0.0606

Flow rates in kg/s				
Water	277.2824	323.9125	324.0000	463.3200
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	93	94	95	96
Name				
- - Overall - -				
Molar flow kmol/s	61.6837	15.3918	12.8496	89.9251
Mass flow kg/s	1111.2327	277.2824	231.4850	1620.0000
Temp C	90.8354	94.3298	82.5498	90.2507
Pres bar	4.0000	4.0000	4.0000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/s	-17336.	-4321.8	-3619.4	-25277.
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	964.2685	961.8517	969.7712	964.6676
Actual vol m3/h	4148.6758	1037.8073	859.3222	6045.6055
Std liq m3/h	4000.4431	998.2180	833.3471	5832.0083
Std vap 0 C m3/h	4977207.5000	1241947.1250	1036820.6875	7255975.5000
- - Liquid only - -				
Molar flow kmol/s	61.6837	15.3918	12.8496	89.9251
Mass flow kg/s	1111.2327	277.2824	231.4850	1620.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150

Actual dens kg/m3	964.2685	961.8517	969.7712	964.6676
Actual vol m3/h	4148.6758	1037.8073	859.3222	6045.6055
Std liq m3/h	4000.4431	998.2180	833.3471	5832.0083
Std vap 0 C m3/h	4977207.5000	1241947.1250	1036820.6875	7255975.5000
Cp J/kmol-K	75752.1016	75821.5156	75605.9922	75740.9453
Z factor	0.0033	0.0033	0.0034	0.0033
Visc Pa-sec	0.0003121	0.0002994	0.0003460	0.0003143
Th cond W/m-K	0.6712	0.6731	0.6659	0.6708
Surf. tens. N/m	0.0603	0.0597	0.0619	0.0604

Flow rates in kg/s

Water	1111.2327	277.2824	231.4850	1620.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	97	98	99	100
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Name

- - Overall - -

Molar flow kmol/s	12.8496	89.9251	89.9251	89.9251
Mass flow kg/s	231.4850	1620.0000	1620.0000	1620.0000
Temp C	60.0000	90.3078	60.0000	60.0000
Pres bar	4.0000	10.3000	7.3000	4.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/s	-3641.3	-25276.	-25482.	-25483.
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	964.6286	982.9359	982.9359
Actual vol m3/h	847.8130	6045.8501	5933.2451	5933.2451
Std liq m3/h	833.3471	5832.0083	5832.0083	5832.0083
Std vap 0 C m3/h	1036820.6875	7255975.5000	7255975.5000	7255975.5000

- - Liquid only - -

Molar flow kmol/s	12.8496	89.9251	89.9251	89.9251
Mass flow kg/s	231.4850	1620.0000	1620.0000	1620.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	982.9359	964.6286	982.9359	982.9359
Actual vol m3/h	847.8130	6045.8501	5933.2451	5933.2451
Std liq m3/h	833.3471	5832.0083	5832.0083	5832.0083
Std vap 0 C m3/h	1036820.6875	7255975.5000	7255975.5000	7255975.5000
Cp J/kmol-K	75338.3750	75716.7578	75325.1406	75338.3750
Z factor	0.0035	0.0085	0.0064	0.0035
Visc Pa-sec	0.0004783	0.0003145	0.0004787	0.0004783
Th cond W/m-K	0.6474	0.6709	0.6474	0.6474
Surf. tens. N/m	0.0660	0.0604	0.0660	0.0660

Flow rates in kg/s

Water	231.4850	1620.0000	1620.0000	1620.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000

CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	101	102	103	104
Name				
- - Overall - -				
Molar flow kmol/s	5.2542	15.0000	8.5050	6.4950
Mass flow kg/s	479.6299	1369.2750	776.3789	592.8961
Temp C	50.0003	50.0003	50.0003	50.0003
Pres bar	1.0000	1.0000	1.0000	1.0000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/s	-5729.8	-16358.	-9274.8	-7082.9
Tc C	0.0000	0.0000	0.0000	0.0000
Pc bar	0.0000	0.0000	0.0000	0.0000
Std. sp gr. wtr = 1	2.775	2.775	2.775	2.775
Std. sp gr. air = 1	3.152	3.152	3.152	3.152
Degree API	-80.5007	-80.5007	-80.5007	-80.5007
Average mol wt	91.2850	91.2850	91.2850	91.2850
Actual dens kg/m3	2772.6951	2772.6953	2772.6953	2772.6953
Actual vol m3/h	622.7398	1777.8333	1008.0314	769.8019
Std liq m3/h	622.3250	1776.6492	1007.3601	769.2891
Std vap 0 C m3/h	423957.0938	1210337.0000	686261.1250	524075.9688

Flow rates in kg/s				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	58.9280	168.2310	95.3870	72.8440
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	420.7019	1201.0441	680.9919	520.0521
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	105	106	107	108
Name				
- - Overall - -				
Molar flow kmol/s	8.5050	6.4950	12.0000	12.0000
Mass flow kg/s	776.3789	592.8961	528.1200	528.1200
Temp C	784.5293	784.2330	900.0000	70.0003
Pres bar	1.0000	1.0000	1.0000	1.0000
Vapor mole fraction	0.0000	0.0000	1.000	1.000
Enth MJ/s	-8626.8	-6588.2	-4207.3	-4701.9
Tc C	0.0000	0.0000	31.0500	31.0500
Pc bar	0.0000	0.0000	73.8152	73.8152
Std. sp gr. wtr = 1	2.775	2.775	0.827	0.827
Std. sp gr. air = 1	3.152	3.152	1.520	1.520
Degree API	-80.5007	-80.5007	39.6004	39.6004
Average mol wt	91.2850	91.2850	44.0100	44.0100
Actual dens kg/m3	2733.2073	2733.2234	0.4511	1.5475
Actual vol m3/h	1022.5950	780.9190	4214378.5000	1228597.8750
Std liq m3/h	1007.3601	769.2891	2298.9536	2298.9536
Std vap 0 C m3/h	686261.1250	524075.9688	968269.6250	968269.6250
- - Vapor only - -				
Molar flow kmol/s			12.0000	12.0000
Mass flow kg/s			528.1200	528.1200
Average mol wt			44.0100	44.0100
Actual dens kg/m3			0.4511	1.5475
Actual vol m3/h			4214378.5000	1228597.8750

Std liq m3/h	2298.9536	2298.9536
Std vap 0 C m3/h	968269.6250	968269.6250
Cp J/kmol-K	56135.8398	39545.5430
Z factor	1.0003	0.9969
Visc Pa-sec	4.446e-005	1.707e-005
Th cond W/m-K	0.0772	0.0200

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	528.1200	528.1200
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	95.3870	72.8440	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	680.9919	520.0521	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	109	110	111	114
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Name

- - Overall - -

Molar flow kmol/s	12.0000	15.0000	15.0000	12.0000
Mass flow kg/s	528.1200	1369.2750	841.1550	528.1199
Temp C	40.2715	784.4010	900.0000	43.7124
Pres bar	1.0000	1.0000	1.0000	74.7725
Vapor mole fraction	1.000	0.0000	0.0000	1.000
Enth MJ/s	-4715.8	-15215.	-8845.6	-4761.9
Tc C	31.0500	0.0000	0.0000	31.0500
Pc bar	73.8152	0.0000	0.0000	73.8152
Std. sp gr. wtr = 1	0.827	2.775	3.297	0.827
Std. sp gr. air = 1	1.520	3.152	1.936	1.520
Degree API	39.6004	-80.5007	-88.5865	39.6004
Average mol wt	44.0100	91.2850	56.0770	44.0100
Actual dens kg/m3	1.6962	2733.2141	3297.3228	208.2282
Actual vol m3/h	1120880.7500	1803.5142	918.3687	9130.5195
Std liq m3/h	2298.9536	1776.6492	918.3687	2298.9534
Std vap 0 C m3/h	968269.6250	1210337.0000	1210337.0000	968269.5625

- - Vapor only - -

Molar flow kmol/s	12.0000			12.0000
Mass flow kg/s	528.1200			528.1199
Average mol wt	44.0100			44.0100
Actual dens kg/m3	1.6962			208.2282
Actual vol m3/h	1120880.7500			9130.5195
Std liq m3/h	2298.9536			2298.9534
Std vap 0 C m3/h	968269.6250			968269.5625
Cp J/kmol-K	38209.6680			109265.8438
Z factor	0.9958			0.5999
Visc Pa-sec	1.570e-005			2.114e-005
Th cond W/m-K	0.0177			0.0285

Flow rates in kg/s

Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	528.1200	0.0000	0.0000	528.1199
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	168.2310	841.1550	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	1201.0441	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	115	116	117	118
Name				
- - Overall - -				
Molar flow kmol/s	60.0000	4.0000	3.3390	4.0000
Mass flow kg/s	2640.6001	176.0400	304.8007	176.0400
Temp C	<b>511.0000</b>	-46.3819	40.0000	7.0000
Pres bar	2.0000	2.0000	2.0000	2.0000
Vapor mole fraction	1.000	1.000	0.0000	1.000
Enth MJ/s	-22292.	-1584.7	-3644.2	-1577.1
Tc C	31.0500	31.0500	0.0000	31.0500
Pc bar	73.8152	73.8152	0.0000	73.8152
Std. sp gr. wtr = 1	0.827	0.827	2.775	0.827
Std. sp gr. air = 1	1.520	1.520	3.152	1.520
Degree API	39.6004	39.6004	-80.5007	39.6004
Average mol wt	44.0100	44.0100	91.2850	44.0100
Actual dens kg/m3	1.3496	4.7797	2773.2322	3.8258
Actual vol m3/h	7043751.0000	132589.6406	395.6691	165648.2031
Std liq m3/h	11494.7686	766.3179	395.4821	766.3179
Std vap 0 C m3/h	4841348.0000	322756.5313	269421.0313	322756.5313
- - Vapor only - -				
Molar flow kmol/s	60.0000	4.0000		4.0000
Mass flow kg/s	2640.6001	176.0400		176.0400
Average mol wt	44.0100	44.0100		44.0100
Actual dens kg/m3	1.3496	4.7797		3.8258
Actual vol m3/h	7043751.0000	132589.6406		165648.2031
Std liq m3/h	11494.7686	766.3179		766.3179
Std vap 0 C m3/h	4841348.0000	322756.5313		322756.5313
Cp J/kmol-K	50939.3359	34238.6289		36837.5820
Z factor	1.0005	0.9768		0.9879
Visc Pa-sec	3.364e-005	1.143e-005		1.410e-005
Th cond W/m-K	0.0545	0.0113		0.0153
Flow rates in kg/s				
Water	0.0000	0.0000	0.0000	0.0000
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	2640.6001	176.0400	0.0000	176.0400
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	37.4482	0.0000
CaCO3_Perry	0.0000	0.0000	267.3524	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	119	121	122	123
Name				
- - Overall - -				
Molar flow kmol/s	58.0000	5.0000	4.0000	17.1680
Mass flow kg/s	1044.8700	280.3850	176.0400	309.2815
Temp C	<b>12.0000</b>	508.1176	58.4452	6.1618
Pres bar	<b>1.2000</b>	1.0000	74.0000	1.2000
Vapor mole fraction	0.0000	0.0000	1.000	0.0000
Enth MJ/s	-16646.	-3053.1	-1581.8	-4934.8
Tc C	374.2000	0.0000	31.0500	374.2000
Pc bar	221.1823	0.0000	73.8152	221.1823
Std. sp gr. wtr = 1	1.000	3.297	0.827	1.000
Std. sp gr. air = 1	0.622	1.936	1.520	0.622
Degree API	10.0000	-88.5865	39.6004	10.0000
Average mol wt	18.0150	56.0770	44.0100	18.0150
Actual dens kg/m3	999.1458	3297.3228	169.0505	999.6664
Actual vol m3/h	3764.7483	306.1229	3748.8452	1113.7850

Std liq m3/h	3761.5374	306.1229	766.3179	1113.4150
Std vap 0 C m3/h	4679969.5000	403445.6250	322756.5313	1385271.0000
- - Vapor only - -				
Molar flow kmol/s			4.0000	
Mass flow kg/s			176.0400	
Average mol wt			44.0100	
Actual dens kg/m3			169.0505	
Actual vol m3/h			3748.8452	
Std liq m3/h			766.3179	
Std vap 0 C m3/h			322756.5313	
Cp J/kmol-K			75255.4375	
Z factor			0.6989	
Visc Pa-sec			2.050e-005	
Th cond W/m-K			0.0274	
- - Liquid only - -				
Molar flow kmol/s	58.0000			17.1680
Mass flow kg/s	1044.8700			309.2815
Average mol wt	18.0150			18.0150
Actual dens kg/m3	999.1458			999.6664
Actual vol m3/h	3764.7483			1113.7850
Std liq m3/h	3761.5374			1113.4150
Std vap 0 C m3/h	4679969.5000			1385271.0000
Cp J/kmol-K	75535.1484			75715.1250
Z factor	0.0012			0.0012
Visc Pa-sec	0.001253			0.001456
Th cond W/m-K	0.5869			0.5775
Surf. tens. N/m	0.0743			0.0753

Flow rates in kg/s				
Water	1044.8700	0.0000	0.0000	309.2815
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	176.0400	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	224.3080	0.0000	0.0000
CaO_inerte	0.0000	56.0770	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	124	125	126	127
Name				
- - Overall - -				
Molar flow kmol/s	13.9200	4.0000	4.0000	13.9200
Mass flow kg/s	250.7688	176.0400	176.0400	250.7688
Temp C	12.0000	7.0000	-11.7110	6.1728
Pres bar	1.2000	33.0000	25.0000	1.2000
Vapor mole fraction	0.0000	1.000	1.000	0.0000
Enth MJ/s	-3995.0	-1584.1	-1585.6	-4001.1
Tc C	374.2000	31.0500	31.0500	374.2000
Pc bar	221.1823	73.8152	73.8152	221.1823
Std. sp gr. wtr = 1	1.000	0.827	0.827	1.000
Std. sp gr. air = 1	0.622	1.520	1.520	0.622
Degree API	10.0000	39.6004	39.6004	10.0000
Average mol wt	18.0150	44.0100	44.0100	18.0150
Actual dens kg/m3	999.1458	82.2954	65.5003	999.6656
Actual vol m3/h	903.5396	7700.8408	9675.4385	903.0696
Std liq m3/h	902.7688	766.3179	766.3179	902.7688
Std vap 0 C m3/h	1123192.7500	322756.5313	322756.5313	1123192.7500
- - Vapor only - -				
Molar flow kmol/s		4.0000	4.0000	
Mass flow kg/s		176.0400	176.0400	

Average mol wt		44.0100	44.0100	
Actual dens kg/m3		82.2954	65.5003	
Actual vol m3/h		7700.8408	9675.4385	
Std liq m3/h		766.3179	766.3179	
Std vap 0 C m3/h		322756.5313	322756.5313	
Cp J/kmol-K		55572.2070	51420.4766	
Z factor		0.7578	0.7729	
Visc Pa-sec		1.567e-005	1.437e-005	
Th cond W/m-K		0.0189	0.0167	
- - Liquid only - -				
Molar flow kmol/s	13.9200			13.9200
Mass flow kg/s	250.7688			250.7688
Average mol wt	18.0150			18.0150
Actual dens kg/m3	999.1458			999.6656
Actual vol m3/h	903.5396			903.0696
Std liq m3/h	902.7688			902.7688
Std vap 0 C m3/h	1123192.7500			1123192.7500
Cp J/kmol-K	75535.1484			75714.6953
Z factor	0.0012			0.0012
Visc Pa-sec	0.001253			0.001456
Th cond W/m-K	0.5869			0.5775
Surf. tens. N/m	0.0743			0.0753
Flow rates in kg/s				
Water	250.7688	0.0000	0.0000	250.7688
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	176.0400	176.0400	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	128	129	130	131
Name				
- - Overall - -				
Molar flow kmol/s	45.6474	4.0000	4.0000	4.0099
Mass flow kg/s	822.3378	176.0400	176.0400	72.2381
Temp C	6.1762	-32.2367	-34.1400	4.8540
Pres bar	1.2000	13.0000	6.0000	1.2000
Vapor mole fraction	0.0000	1.000	1.000	0.0000
Enth MJ/s	-13121.	-1585.6	-1584.0	-1153.0
Tc C	374.2000	31.0500	31.0500	374.2000
Pc bar	221.1823	73.8152	73.8152	221.1823
Std. sp gr. wtr = 1	1.000	0.827	0.827	1.000
Std. sp gr. air = 1	0.622	1.520	1.520	0.622
Degree API	10.0000	39.6004	39.6004	10.0000
Average mol wt	18.0150	44.0100	44.0100	18.0150
Actual dens kg/m3	999.6655	33.2093	14.1615	999.7306
Actual vol m3/h	2961.4063	19083.3281	44751.0430	260.1273
Std liq m3/h	2960.4199	766.3179	766.3179	260.0576
Std vap 0 C m3/h	3683248.5000	322756.5313	322756.5313	323554.3438
- - Vapor only - -				
Molar flow kmol/s		4.0000	4.0000	
Mass flow kg/s		176.0400	176.0400	
Average mol wt		44.0100	44.0100	
Actual dens kg/m3		33.2093	14.1615	
Actual vol m3/h		19083.3281	44751.0430	
Std liq m3/h		766.3179	766.3179	
Std vap 0 C m3/h		322756.5313	322756.5313	

Cp J/kmol-K		41328.9531	36630.7070	
Z factor		0.8602	0.9384	
Visc Pa-sec		1.270e-005	1.227e-005	
Th cond W/m-K		0.0137	0.0126	
- - Liquid only - -				
Molar flow kmol/s	45.6474			4.0099
Mass flow kg/s	822.3378			72.2381
Average mol wt	18.0150			18.0150
Actual dens kg/m3	999.6655			999.7307
Actual vol m3/h	2961.4063			260.1273
Std liq m3/h	2960.4199			260.0576
Std vap 0 C m3/h	3683248.5000			323554.3438
Cp J/kmol-K	75714.5625			75768.7422
Z factor	0.0012			0.0012
Visc Pa-sec	0.001456			0.001508
Th cond W/m-K	0.5775			0.5754
Surf. tens. N/m	0.0753			0.0756
Flow rates in kg/s				
Water	822.3378	0.0000	0.0000	72.2381
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	176.0400	176.0400	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000
Stream No.	132	133	134	135
Name				
- - Overall - -				
Molar flow kmol/s	58.0000	17.1680	26.9120	14.5594
Mass flow kg/s	1044.8700	309.2815	484.8196	262.2874
Temp C	6.0847	12.0000	12.0000	12.0000
Pres bar	1.2000	1.2000	1.2000	1.2000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/s	-16672.	-4927.2	-7723.7	-4178.5
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.6706	999.1457	999.1458	999.1458
Actual vol m3/h	3762.7712	1114.3655	1746.8430	945.0421
Std liq m3/h	3761.5374	1113.4150	1745.3530	944.2360
Std vap 0 C m3/h	4679969.5000	1385271.0000	2171505.7500	1174784.6250
- - Liquid only - -				
Molar flow kmol/s	58.0000	17.1680	26.9120	14.5594
Mass flow kg/s	1044.8700	309.2815	484.8196	262.2874
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.6707	999.1458	999.1458	999.1458
Actual vol m3/h	3762.7712	1114.3655	1746.8430	945.0421
Std liq m3/h	3761.5374	1113.4150	1745.3530	944.2360
Std vap 0 C m3/h	4679969.5000	1385271.0000	2171505.7500	1174784.6250
Cp J/kmol-K	75718.1250	75535.1484	75535.1484	75535.1484
Z factor	0.0012	0.0012	0.0012	0.0012
Visc Pa-sec	0.001459	0.001253	0.001253	0.001253
Th cond W/m-K	0.5774	0.5869	0.5869	0.5869
Surf. tens. N/m	0.0754	0.0743	0.0743	0.0743

Flow rates in kg/s				
Water	1044.8700	309.2815	484.8196	262.2874
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	136	137	138	139
Name				
- - Overall - -				
Molar flow kmol/s	14.5594	8.3427	8.3427	4.0099
Mass flow kg/s	262.2874	150.2941	150.2941	72.2381
Temp C	6.1960	12.0000	6.1759	12.0000
Pres bar	1.2000	1.2000	1.2000	1.2000
Vapor mole fraction	0.0000	0.0000	0.0000	0.0000
Enth MJ/s	-4184.9	-2394.3	-2398.0	-1150.8
Tc C	374.2000	374.2000	374.2000	374.2000
Pc bar	221.1823	221.1823	221.1823	221.1823
Std. sp gr. wtr = 1	1.000	1.000	1.000	1.000
Std. sp gr. air = 1	0.622	0.622	0.622	0.622
Degree API	10.0000	10.0000	10.0000	10.0000
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.6644	999.1458	999.6655	999.1459
Actual vol m3/h	944.5518	541.5214	541.2398	260.2796
Std liq m3/h	944.2360	541.0595	541.0595	260.0576
Std vap 0 C m3/h	1174784.6250	673166.8125	673166.8125	323554.3438
- - Liquid only - -				
Molar flow kmol/s	14.5594	8.3427	8.3427	4.0099
Mass flow kg/s	262.2874	150.2941	150.2941	72.2381
Average mol wt	18.0150	18.0150	18.0150	18.0150
Actual dens kg/m3	999.6644	999.1458	999.6655	999.1459
Actual vol m3/h	944.5518	541.5214	541.2398	260.2796
Std liq m3/h	944.2360	541.0595	541.0595	260.0576
Std vap 0 C m3/h	1174784.6250	673166.8125	673166.8125	323554.3438
Cp J/kmol-K	75713.7969	75535.1484	75714.5781	75535.1484
Z factor	0.0012	0.0012	0.0012	0.0012
Visc Pa-sec	0.001455	0.001253	0.001456	0.001253
Th cond W/m-K	0.5776	0.5869	0.5775	0.5869
Surf. tens. N/m	0.0753	0.0743	0.0753	0.0743

Flow rates in kg/s				
Water	262.2874	150.2941	150.2941	72.2381
Methane	0.0000	0.0000	0.0000	0.0000
Carbon Dioxide	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0000	0.0000	0.0000	0.0000
Oxygen	0.0000	0.0000	0.0000	0.0000
Calcium Carbonat	0.0000	0.0000	0.0000	0.0000
CaO	0.0000	0.0000	0.0000	0.0000
CaO_inerte	0.0000	0.0000	0.0000	0.0000
CaCO3_Perry	0.0000	0.0000	0.0000	0.0000
Water_orange	0.0000	0.0000	0.0000	0.0000

Stream No.	140	141	142	143
Name				
- - Overall - -				
Molar flow kmol/s	58.0000	1.6610	5.0000	25.7186

Mass flow	kg/s	1044.8700	151.6244	456.4250	463.3200
Temp	C	12.0000	27.0000	35.6907	60.0000
Pres	bar	1.2000	2.0000	2.0000	4.0000
Vapor mole fraction		0.0000	0.0000	0.0000	0.0000
Enth	MJ/s	-16646.	-1814.7	-5458.9	-7288.1
Tc	C	374.2000	0.0000	0.0000	374.2000
Pc	bar	221.1823	0.0000	0.0000	221.1823
Std. sp gr.	wtr = 1	1.000	2.775	2.775	1.000
Std. sp gr.	air = 1	0.622	3.152	3.152	0.622
Degree API		10.0000	-80.5007	-80.5007	10.0000
Average mol wt		18.0150	91.2850	91.2850	18.0150
Actual dens	kg/m3	999.1458	2773.9294	2773.4634	982.9359
Actual vol	m3/h	3764.7483	196.7778	592.4471	1696.9082
Std liq	m3/h	3761.5374	196.7343	592.2164	1667.9543
Std vap 0 C	m3/h	4679969.5000	134024.6406	403445.6875	2075208.8750
- - Liquid only - -					
Molar flow	kmol/s	58.0000			25.7186
Mass flow	kg/s	1044.8700			463.3200
Average mol wt		18.0150			18.0150
Actual dens	kg/m3	999.1458			982.9359
Actual vol	m3/h	3764.7483			1696.9082
Std liq	m3/h	3761.5374			1667.9543
Std vap 0 C	m3/h	4679969.5000			2075208.8750
Cp	J/kmol-K	75535.1484			75338.3750
Z factor		0.0012			0.0035
Visc	Pa-sec	0.001253			0.0004783
Th cond	W/m-K	0.5869			0.6474
Surf. tens.	N/m	0.0743			0.0660

Flow rates in kg/s					
Water		1044.8700	0.0000	0.0000	463.3200
Methane		0.0000	0.0000	0.0000	0.0000
Carbon Dioxide		0.0000	0.0000	0.0000	0.0000
Nitrogen		0.0000	0.0000	0.0000	0.0000
Oxygen		0.0000	0.0000	0.0000	0.0000
Calcium Carbonat		0.0000	0.0000	0.0000	0.0000
CaO		0.0000	0.0000	0.0000	0.0000
CaO_inerte		0.0000	18.6288	56.0770	0.0000
CaCO3_Perry		0.0000	132.9956	400.3481	0.0000
Water_orange		0.0000	0.0000	0.0000	0.0000

Stream No. 144

Name

- - Overall - -

Molar flow	kmol/s	17.9802
Mass flow	kg/s	323.9125
Temp	C	60.0000
Pres	bar	4.0000
Vapor mole fraction		0.0000
Enth	MJ/s	-5095.2
Tc	C	374.2000
Pc	bar	221.1823
Std. sp gr.	wtr = 1	1.000
Std. sp gr.	air = 1	0.622
Degree API		10.0000
Average mol wt		18.0150
Actual dens	kg/m3	982.9359
Actual vol	m3/h	1186.3286
Std liq	m3/h	1166.0867
Std vap 0 C	m3/h	1450803.2500
- - Liquid only - -		
Molar flow	kmol/s	17.9802

Mass flow	kg/s	323.9125
Average mol wt		18.0150
Actual dens	kg/m <sup>3</sup>	982.9359
Actual vol	m <sup>3</sup> /h	1186.3286
Std liq	m <sup>3</sup> /h	1166.0867
Std vap 0 C	m <sup>3</sup> /h	1450803.2500
Cp	J/kmol-K	75338.3750
Z factor		0.0035
Visc	Pa-sec	0.0004783
Th cond	W/m-K	0.6474
Surf. tens.	N/m	0.0660

Flow rates in kg/s		
Water		323.9125
Methane		0.0000
Carbon Dioxide		0.0000
Nitrogen		0.0000
Oxygen		0.0000
Calcium Carbonat		0.0000
CaO		0.0000
CaO_inerte		0.0000
CaCO <sub>3</sub> _Perry		0.0000
Water_orange		0.0000

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