



1	 HYPROTECH <small>LIFECYCLE INNOVATION</small>	TEAM LND Calgary, Alberta CANADA	Case Name: C:\DOCUMENTS AND SETTINGS\EDWARD A. MOSCOSO\MIS DOCUM
2			Unit Set: SI
3			Date/Time: Sun Nov 05 14:24:18 2006
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Workbook: Case (Main)

Streams

11	Name	484	703	703A	702	702A
12	Vapour Fraction	0.0000	1.0000	1.0000	0.0000	0.0111
13	Temperature (C)	141.7 *	140.6	140.6	140.6	139.2
14	Pressure (kPa)	1259 *	552.4	142.5	552.4	488.7
15	Mass Flow (kg/h)	9.409e+004 *	735.7	735.7	9.336e+004	9.336e+004
16	Mass Density (kg/m3)	665.5	11.38	2.936	664.8	408.6
17	Mass Enthalpy (kJ/kg)	-1816	-1422	-1422	-1820	-1820
18	Molecular Weight	80.85	70.88	70.88	80.94	80.94
19	Comp Mass Frac (Cyclohexane)	0.9499 *	0.9016	0.9016	0.9503	0.9503
20	Comp Mass Frac (cycHexanol)	0.0175 *	0.0116	0.0116	0.0175	0.0175
21	Comp Mass Frac (CC6one)	0.0189 *	0.0051	0.0051	0.0191	0.0191
22	Comp Mass Frac (H2O)	0.0121 *	0.0171	0.0171	0.0120	0.0120
23	Comp Mass Frac (Oxygen)	0.0000 *	0.0023	0.0023	0.0000	0.0000
24	Comp Mass Frac (Nitrogen)	0.0010 *	0.0610	0.0610	0.0006	0.0006
25	Comp Mass Frac (CO)	0.0000 *	0.0007	0.0007	0.0000	0.0000
26	Comp Mass Frac (1-Pentanol)	0.0005 *	0.0008	0.0008	0.0005	0.0005
27	Comp Mass Frac (CC6Peroxide)	0.0000 *	0.0000	0.0000	0.0000	0.0000
28	Name	484A	704	705	733	1000A
29	Vapour Fraction	0.0089	0.0000	1.0000	0.0000	1.0000
30	Temperature (C)	140.6	136.6	131.3	67.36	214.6
31	Pressure (kPa)	552.4	416.1 *	380.8 *	771.4	1005
32	Mass Flow (kg/h)	9.409e+004	5.815e+004	5.531e+004	2.010e+004	1.000e+004
33	Mass Density (kg/m3)	458.8	670.5	9.050	736.1	4.462
34	Mass Enthalpy (kJ/kg)	-1816	-1781	-1477	-1817	-1.305e+004
35	Molecular Weight	80.85	82.73	79.91	83.21	18.02
36	Comp Mass Frac (Cyclohexane)	0.9499	0.9387	0.9778	0.9922	0.0000 *
37	Comp Mass Frac (cycHexanol)	0.0175	0.0236	0.0062	0.0040	0.0000 *
38	Comp Mass Frac (CC6one)	0.0189	0.0306	0.0000	0.0000	0.0000 *
39	Comp Mass Frac (H2O)	0.0121	0.0069	0.0141	0.0030	1.0000 *
40	Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0000	0.0000	0.0000 *
41	Comp Mass Frac (Nitrogen)	0.0010	0.0000	0.0011	0.0004	0.0000 *
42	Comp Mass Frac (CO)	0.0000	0.0000	0.0000	0.0000	0.0000 *
43	Comp Mass Frac (1-Pentanol)	0.0005	0.0003	0.0007	0.0003	0.0000 *
44	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0000	0.0000	0.0000 *
45	Name	1001	1000	704A	734	735
46	Vapour Fraction	0.0000 *	1.0000	0.2794	0.0000	0.0000
47	Temperature (C)	178.6	220.0 *	92.20	67.36	67.36 *
48	Pressure (kPa)	970.0	1278 *	135.8 *	771.4	771.4 *
49	Mass Flow (kg/h)	1.000e+004	1.000e+004 *	5.815e+004	2.030e+004	4.040e+004 *
50	Mass Density (kg/m3)	876.1	5.616	13.06	736.1	736.1
51	Mass Enthalpy (kJ/kg)	-1.516e+004	-1.305e+004	-1781	-1817	-1817
52	Molecular Weight	18.02	18.02	82.73	83.21	83.21
53	Comp Mass Frac (Cyclohexane)	0.0000	0.0000 *	0.9387	0.9922	0.9922 *
54	Comp Mass Frac (cycHexanol)	0.0000	0.0000 *	0.0236	0.0040	0.0040 *
55	Comp Mass Frac (CC6one)	0.0000	0.0000 *	0.0306	0.0000	0.0000 *
56	Comp Mass Frac (H2O)	1.0000	1.0000 *	0.0069	0.0030	0.0030 *
57	Comp Mass Frac (Oxygen)	0.0000	0.0000 *	0.0000	0.0000	0.0000 *
58	Comp Mass Frac (Nitrogen)	0.0000	0.0000 *	0.0000	0.0004	0.0004 *
59	Comp Mass Frac (CO)	0.0000	0.0000 *	0.0000	0.0000	0.0000 *
60	Comp Mass Frac (1-Pentanol)	0.0000	0.0000 *	0.0003	0.0003	0.0003 *
61	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000 *	0.0000	0.0000	0.0000 *

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Workbook: Case (Main) (continued)

Streams (continued)

11	Name	705A	707	706	709	708
12	Vapour Fraction	1.0000	1.0000	0.0000	1.0000	0.0000
13	Temperature (C)	131.3	118.0	118.0	92.22	103.3
14	Pressure (kPa)	380.8	378.9	378.9	141.0 *	157.3
15	Mass Flow (kg/h)	3042	244.0	5.202e+004	7.607e+004	8824
16	Mass Density (kg/m3)	9.050	7.653	686.8	3.814	758.8
17	Mass Enthalpy (kJ/kg)	-1477	-1355	-1865	-1445	-2411
18	Molecular Weight	79.91	65.69	79.99	82.19	83.25
19	Comp Mass Frac (Cyclohexane)	0.9778	0.8672	0.9783	0.9885	0.6075
20	Comp Mass Frac (cycHexanol)	0.0062	0.0034	0.0062	0.0040	0.1481
21	Comp Mass Frac (CC6one)	0.0000	0.0000	0.0000	0.0000	0.2258
22	Comp Mass Frac (H2O)	0.0141	0.0152	0.0141	0.0061	0.0182
23	Comp Mass Frac (Oxygen)	0.0000	0.0030	0.0000	0.0000	0.0000
24	Comp Mass Frac (Nitrogen)	0.0011	0.1091	0.0006	0.0011	0.0000
25	Comp Mass Frac (CO)	0.0000	0.0012	0.0000	0.0000	0.0000
26	Comp Mass Frac (1-Pentanol)	0.0007	0.0009	0.0007	0.0002	0.0004
27	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0000	0.0000	0.0000
28	Name	711A	710	711	1002	1002A
29	Vapour Fraction	1.0000	0.0000	0.9999	1.0000	1.0000
30	Temperature (C)	103.4	133.3	103.4 *	220.0 *	210.9
31	Pressure (kPa)	157.3	160.6 *	157.3 *	1278 *	821.1 *
32	Mass Flow (kg/h)	5464	3360	5466 *	1132 *	1132
33	Mass Density (kg/m3)	3.891	808.2	3.891	5.616	3.675
34	Mass Enthalpy (kJ/kg)	-1738	-2782	-1738	-1.305e+004	-1.305e+004
35	Molecular Weight	77.44	94.84	77.43	18.02	18.02
36	Comp Mass Frac (Cyclohexane)	0.9070	0.1205	0.9070 *	0.0000 *	0.0000
37	Comp Mass Frac (cycHexanol)	0.0277	0.3439	0.0278 *	0.0000 *	0.0000
38	Comp Mass Frac (CC6one)	0.0387	0.5299	0.0387 *	0.0000 *	0.0000
39	Comp Mass Frac (H2O)	0.0264	0.0049	0.0264 *	1.0000 *	1.0000
40	Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0000 *	0.0000 *	0.0000
41	Comp Mass Frac (Nitrogen)	0.0000	0.0000	0.0000 *	0.0000 *	0.0000
42	Comp Mass Frac (CO)	0.0000	0.0000	0.0000 *	0.0000 *	0.0000
43	Comp Mass Frac (1-Pentanol)	0.0002	0.0007	0.0002 *	0.0000 *	0.0000
44	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0000 *	0.0000 *	0.0000
45	Name	1003	CW_in	CW_out	713	715
46	Vapour Fraction	0.0000 *	0.0000	0.0000	0.0038	1.0000
47	Temperature (C)	169.7	31.90 *	44.33	44.56	44.56
48	Pressure (kPa)	786.7	542.6 *	444.6 *	140.9	140.9
49	Mass Flow (kg/h)	1132	6.687e+005	6.687e+005	7.744e+004	142.2
50	Mass Density (kg/m3)	884.9	1002	992.7	456.9	2.105
51	Mass Enthalpy (kJ/kg)	-1.520e+004	-1.579e+004	-1.573e+004	-1910	-678.6
52	Molecular Weight	18.02	18.02	18.02	81.97	39.47
53	Comp Mass Frac (Cyclohexane)	0.0000	0.0000 *	0.0000	0.9874	0.4317
54	Comp Mass Frac (cycHexanol)	0.0000	0.0000 *	0.0000	0.0042	0.0004
55	Comp Mass Frac (CC6one)	0.0000	0.0000 *	0.0000	0.0000	0.0000
56	Comp Mass Frac (H2O)	1.0000	1.0000 *	1.0000	0.0066	0.0013
57	Comp Mass Frac (Oxygen)	0.0000	0.0000 *	0.0000	0.0000	0.0208
58	Comp Mass Frac (Nitrogen)	0.0000	0.0000 *	0.0000	0.0014	0.5329
59	Comp Mass Frac (CO)	0.0000	0.0000 *	0.0000	0.0000	0.0129
60	Comp Mass Frac (1-Pentanol)	0.0000	0.0000 *	0.0000	0.0003	0.0001
61	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000 *	0.0000	0.0000	0.0000




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Workbook: Case (Main) (continued)

Streams (continued)

Name	714	716	(Ol/Ona)_in	(Ol/Ona)_out	717
Vapour Fraction	0.0000	0.8636	0.0000	0.0000	1.0000
Temperature (C)	44.56	22.10	12.00 *	20.93	22.10
Pressure (kPa)	140.9	140.5	1278 *	1278	140.5
Mass Flow (kg/h)	7.730e+004	142.2	1200 *	1200	101.5
Mass Density (kg/m3)	758.2	2.613	918.6	910.2	1.866
Mass Enthalpy (kJ/kg)	-1912	-817.5	-2879	-2863	-379.1
Molecular Weight	82.13	39.47	95.58	95.58	32.61
Comp Mass Frac (Cyclohexane)	0.9884	0.4317	0.2000 *	0.2000	0.2059
Comp Mass Frac (cycHexanol)	0.0042	0.0004	0.3200 *	0.3200	0.0000
Comp Mass Frac (CC6one)	0.0000	0.0000	0.4800 *	0.4800	0.0000
Comp Mass Frac (H2O)	0.0066	0.0013	0.0000 *	0.0000	0.0002
Comp Mass Frac (Oxygen)	0.0000	0.0208	0.0000 *	0.0000	0.0292
Comp Mass Frac (Nitrogen)	0.0005	0.5329	0.0000 *	0.0000	0.7466
Comp Mass Frac (CO)	0.0000	0.0129	0.0000 *	0.0000	0.0181
Comp Mass Frac (1-Pentanol)	0.0003	0.0001	0.0000 *	0.0000	0.0000
Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0000 *	0.0000	0.0000
Name	718	719-	705C	705B	709A
Vapour Fraction	0.0000	0.0000	0.0057	1.0000	0.9818
Temperature (C)	22.10	44.55	118.0	131.3	92.18
Pressure (kPa)	140.5	140.5	378.9	380.8	141.0
Mass Flow (kg/h)	40.73	7.734e+004	5.226e+004	5.226e+004	8.152e+004
Mass Density (kg/m3)	777.5	757.4	485.6	9.050	3.875
Mass Enthalpy (kJ/kg)	-1910	-1912	-1863	-1477	-1457
Molecular Weight	82.91	82.13	79.91	79.91	81.97
Comp Mass Frac (Cyclohexane)	0.9943	0.9884	0.9778	0.9778	0.9874
Comp Mass Frac (cycHexanol)	0.0012	0.0042	0.0062	0.0062	0.0042
Comp Mass Frac (CC6one)	0.0000	0.0000	0.0000	0.0000	0.0000
Comp Mass Frac (H2O)	0.0039	0.0066	0.0141	0.0141	0.0066
Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0000	0.0000	0.0000
Comp Mass Frac (Nitrogen)	0.0005	0.0005	0.0011	0.0011	0.0014
Comp Mass Frac (CO)	0.0000	0.0000	0.0000	0.0000	0.0000
Comp Mass Frac (1-Pentanol)	0.0002	0.0003	0.0007	0.0007	0.0003
Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0000	0.0000	0.0000
Name	706A	706B	471	471A	471B
Vapour Fraction	0.0000	0.0000	0.0011	1.0000	0.0000
Temperature (C)	118.0	118.0 *	61.50 *	61.48	61.48
Pressure (kPa)	378.9	378.9	248.4 *	228.8	228.8
Mass Flow (kg/h)	2341	4.968e+004	9.409e+004 *	66.46	9.403e+004
Mass Density (kg/m3)	686.8	686.8	673.1	3.382	746.7
Mass Enthalpy (kJ/kg)	-1865	-1865	-1822	-745.6	-1823
Molecular Weight	79.99	79.99	84.80	41.12	84.86
Comp Mass Frac (Cyclohexane)	0.9783	0.9783	0.9537 *	0.4732	0.9540
Comp Mass Frac (cycHexanol)	0.0062	0.0062	0.0079 *	0.0008	0.0079
Comp Mass Frac (CC6one)	0.0000	0.0000	0.0034 *	0.0002	0.0034
Comp Mass Frac (H2O)	0.0141	0.0141	0.0003 *	0.0001	0.0003
Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0000 *	0.0190	0.0000
Comp Mass Frac (Nitrogen)	0.0006	0.0006	0.0010 *	0.4833	0.0007
Comp Mass Frac (CO)	0.0000	0.0000	0.0000 *	0.0233	0.0000
Comp Mass Frac (1-Pentanol)	0.0007	0.0007	0.0000 *	0.0000	0.0000
Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0336 *	0.0000	0.0336

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Workbook: Case (Main) (continued)

Streams (continued)

11	Name	705A1	720-	721-	722	723
12	Vapour Fraction	1.0000	0.0000	1.0000	0.0000	0.0000
13	Temperature (C)	131.3	44.91	44.91	44.91	44.91
14	Pressure (kPa)	141.0 *	134.1	134.1	134.1	134.1
15	Mass Flow (kg/h)	3042	8.721e+004	0.0000	284.1	4.445e+004
16	Mass Density (kg/m3)	3.350	756.5	3.446	992.2	753.5
17	Mass Enthalpy (kJ/kg)	-1477	-1861	-2210	-1.572e+004	-1861
18	Molecular Weight	79.91	83.21	67.97	18.03	83.21
19	Comp Mass Frac (Cyclohexane)	0.9778	0.9922	0.9346	0.0000	0.9922
20	Comp Mass Frac (cycHexanol)	0.0062	0.0040	0.0005	0.0010	0.0040
21	Comp Mass Frac (CC6one)	0.0000	0.0000	0.0000	0.0000	0.0000
22	Comp Mass Frac (H2O)	0.0141	0.0030	0.0649	0.9990	0.0030
23	Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0000	0.0000	0.0000
24	Comp Mass Frac (Nitrogen)	0.0011	0.0004	0.0000	0.0000	0.0004
25	Comp Mass Frac (CO)	0.0000	0.0000	0.0000	0.0000	0.0000
26	Comp Mass Frac (1-Pentanol)	0.0007	0.0003	0.0000	0.0000	0.0003
27	Comp Mass Frac (CC6Peroxide)	0.0000	*** *	*** *	*** *	0.0000
28	Name	724	725	726	727-	706C
29	Vapour Fraction	0.0000	0.0000	1.0000	0.0000	0.1562
30	Temperature (C)	44.91	45.54	27.01	35.00 *	92.03
31	Pressure (kPa)	134.1	805.8	134.1	297.5 *	141.0 *
32	Mass Flow (kg/h)	4.276e+004	4.276e+004	114.6	3735 *	2341
33	Mass Density (kg/m3)	753.5	757.0	1.822	764.5	23.13
34	Mass Enthalpy (kJ/kg)	-1861	-1860	-445.9	-1831	-1865
35	Molecular Weight	83.21	83.21	33.91	84.16	79.99
36	Comp Mass Frac (Cyclohexane)	0.9922	0.9922	0.2558	1.0000 *	0.9783
37	Comp Mass Frac (cycHexanol)	0.0040	0.0040	0.0001	0.0000 *	0.0062
38	Comp Mass Frac (CC6one)	0.0000	0.0000	0.0000	0.0000 *	0.0000
39	Comp Mass Frac (H2O)	0.0030	0.0030	0.0005	0.0000 *	0.0141
40	Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0273	0.0000 *	0.0000
41	Comp Mass Frac (Nitrogen)	0.0004	0.0004	0.6994	0.0000 *	0.0006
42	Comp Mass Frac (CO)	0.0000	0.0000	0.0169	0.0000 *	0.0000
43	Comp Mass Frac (1-Pentanol)	0.0003	0.0003	0.0000	0.0000 *	0.0007
44	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	0.0000	0.0000 *	0.0000
45	Name	720+	721+	719+	725R1-	725R1+
46	Vapour Fraction	0.0000	0.0000	0.0000	0.0000	0.0000
47	Temperature (C)	44.91	44.91	44.55	45.54 *	45.54
48	Pressure (kPa)	134.1	134.1	140.5	805.8 *	805.8
49	Mass Flow (kg/h)	8.721e+004	0.0000	7.734e+004	2352	2352
50	Mass Density (kg/m3)	753.5	778.5	757.6	756.9	756.9
51	Mass Enthalpy (kJ/kg)	-1861	-2716	-1912	-1860	-1860
52	Molecular Weight	83.21	67.97	82.13	83.21	83.21
53	Comp Mass Frac (Cyclohexane)	0.9922	0.9346	0.9884	0.9922 *	0.9922
54	Comp Mass Frac (cycHexanol)	0.0040	0.0005	0.0042	0.0040 *	0.0040
55	Comp Mass Frac (CC6one)	0.0000	0.0000	0.0000	0.0000 *	0.0000
56	Comp Mass Frac (H2O)	0.0030	0.0649	0.0066	0.0030 *	0.0030
57	Comp Mass Frac (Oxygen)	0.0000	0.0000	0.0000	0.0000 *	0.0000
58	Comp Mass Frac (Nitrogen)	0.0004	0.0000	0.0005	0.0004 *	0.0004
59	Comp Mass Frac (CO)	0.0000	0.0000	0.0000	0.0000 *	0.0000
60	Comp Mass Frac (1-Pentanol)	0.0003	0.0000	0.0003	0.0003 *	0.0003
61	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	*** *	0.0000 *	*** *



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Workbook: Case (Main) (continued)

Streams (continued)

11	Name	709E	709F-	709F+	Q_E530	Q_E-531
12	Vapour Fraction	1.0000	0.0000	0.0000	---	---
13	Temperature (C)	60.00	60.00	60.00	---	---
14	Pressure (kPa)	134.1	134.1	134.1	---	---
15	Mass Flow (kg/h)	13.11	4063	4063	---	---
16	Mass Density (kg/m3)	2.376	743.5	742.9	---	---
17	Mass Enthalpy (kJ/kg)	-963.1	-1883	-1883	---	---
18	Molecular Weight	49.09	82.15	82.15	---	---
19	Comp Mass Frac (Cyclohexane)	0.6423	0.9885	0.9885	---	---
20	Comp Mass Frac (cycHexanol)	0.0007	0.0042	0.0042	---	---
21	Comp Mass Frac (CC6one)	0.0000	0.0000	0.0000	---	---
22	Comp Mass Frac (H2O)	0.0025	0.0067	0.0067	---	---
23	Comp Mass Frac (Oxygen)	0.0126	0.0000	0.0000	---	---
24	Comp Mass Frac (Nitrogen)	0.3340	0.0004	0.0004	---	---
25	Comp Mass Frac (CO)	0.0078	0.0000	0.0000	---	---
26	Comp Mass Frac (1-Pentanol)	0.0001	0.0003	0.0003	---	---
27	Comp Mass Frac (CC6Peroxide)	0.0000	0.0000	*** *	---	---
28	Name	Q_E-532	HP_pump	Q_E-533C		
29	Vapour Fraction	---	---	---		
30	Temperature (C)	---	---	---		
31	Pressure (kPa)	---	---	---		
32	Mass Flow (kg/h)	---	---	---		
33	Mass Density (kg/m3)	---	---	---		
34	Mass Enthalpy (kJ/kg)	---	---	---		
35	Molecular Weight	---	---	---		
36	Comp Mass Frac (Cyclohexane)	---	---	---		
37	Comp Mass Frac (cycHexanol)	---	---	---		
38	Comp Mass Frac (CC6one)	---	---	---		
39	Comp Mass Frac (H2O)	---	---	---		
40	Comp Mass Frac (Oxygen)	---	---	---		
41	Comp Mass Frac (Nitrogen)	---	---	---		
42	Comp Mass Frac (CO)	---	---	---		
43	Comp Mass Frac (1-Pentanol)	---	---	---		
44	Comp Mass Frac (CC6Peroxide)	---	---	---		