

TABLE 5 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO.	9710-14	
CATALYST	UCC-101 #9530-90 54 CC 30.00 GM (34.24 GM AFTER THE RUN)	
FEED	C ₃ H ₆ /H ₂ @ 1/1 MOLE RATIO, 290 CC/MIN H ₂ FLOW	
	C ₃ H ₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)	
RUN & SAMPLE NO.	9710-14-1	9710-14-2
C ₃ H ₆ WHSV	1.0	1.0
HRS ON STREAM ⁵	3.75	8.0
PRESSURE, PSIG	150	149
TEMP. C	408	408
FEED C ₃ H ₆ CC	[191.3	[251.1
HOURS FEEDING	[3.257	[4.25
EFFLNT GAS LITER	[111.1	[154.9
GM LIQ HYDROCARBON	[4.16	[0.55
WT. FR. LIQ HC/FEED	.0426	.0043
MATERIAL BALANCE WT %	99.29	97.72
C ₃ H ₆ CONVERSION %	30.98	15.27
PRDT SELECTIVITY WT %		
CH ₄	0.4737	0.5698
C ₂ HC'S	1.1525	1.4976
C ₃ H ₆	46.0853	36.2637
C ₄ H ₁₀	1.3242	0.7388
C ₄ H ₈ =	4.9526	4.1269
C ₅ H ₁₂	0.7812	0.6171
C ₅ H ₁₀ =	3.1740	3.6390
C ₆ H ₁₄	6.6898	7.6566
C ₆ H ₁₂ =	8.4768	14.5966
C ₇ + IN GAS	12.8162	27.3997
LIQ/SATURATES	0.7037	0.0000
LIQ/OLEFINS	2.7726	0.0984
LIQ/AROMATICS	10.5977	2.7957
TOTAL	100.00	100.00
SUBGROUPING		
C ₁ -C ₄	53.99	43.20
C ₅ -420 F	41.37	56.02
420-700 F	4.57	0.71
C ₅ -END PT	46.01	56.80
FOR C ₅ + FRACTION		
SATURATES, WT %	19.16	14.57
OLEFINS	36.83	33.92
AROMATICS	44.01	51.52
ISO/NORMAL MOLE RATIO		
C ₄	1.1043	0.8488
C ₅	1.2801	0.7114
C ₆	1.6005	1.3779
C ₄ =	0.4742	0.4382

TABLE 5 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-14 (CONTINUED)
 CATALYST UCC-101 #9530-90 54 CC 30.00 GM (34.24 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 290 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-14-1	9710-14-2
C3H6 WHSV	1.0	1.0
HRS ON STREAMS	3.75	8.0
PRESSURE, PSIG	150	149
TEMP. C	408	408
PRDT SELECTIVITY WT %		
PARAFFIN/OLEFIN M RATIO		
C3	0.2012	0.0635
C4	0.2581	0.1728
C5	0.2392	0.1648
C6	0.7707	0.5123

LIQ HC COLLECTION		
PHYSICAL APPEARANCE	OIL	OIL
DENSITY	0.831	---
N, REFRACTIVE INDEX	1.4894	---
FIA ANALYSIS, WT %		
AROMATICS	75.3	96.6
OLEFINS	19.7	3.4
SATURATES	5.0	0.0
SIMULATED DISTILLATION		
10 WT % @ DEG F.	249	321
16	279	335
50	383	434
84	505	581
90	560	614
RANGE(16-84%)	226	246
WT % @420 F	67.0	73.0
WT % @700 F	99.5	97.7

TABLE 6 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-15
 CATALYST UCC-101 #9530-90 92 CC 50.00 GM (55.67 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/4 MOLE RATIO, 481 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-15-1	9710-15-2	9710-15-3
C3H6 WHSV	0.27	0.27	0.27
HRS ON STREAMS	3.5	7.0	14.5
PRESSURE, PSIG	25	25	25
TEMP. C	408	408	408
FEED C3H6 CC	[77.40	[171.79	[186.3
HOURS FEEDING	[3.0	[6.5	[7.0
EFFLNT GAS LITER	[115.0	[252.7	[279.4
GM LIQ HYDROCARBON	[0.27	[0.59	[0.0
WT FR. LIQ HC/FEED	.0068	.0067	.0000
MATERIAL BALANCE WT %	85.05	82.70	85.95
C3H6 CONVERSION %	41.13	23.41	13.84
PRDT SELECTIVITY WT %			
CH4	1.4463	1.4299	1.5548
C2 HC'S	2.2528	2.2272	2.6465
C3H8	47.2059	44.9272	53.2126
C4H10	4.2708	1.4997	0.9080
C4H8=	8.6915	7.1067	6.2749
C5H12	2.1488	0.6552	0.4307
C5H10=	4.8486	3.9651	2.9797
C6H14	8.2165	6.5099	6.3193
C6H12=	6.3173	12.0976	13.1388
C7+ IN GAS	12.6762	16.1690	12.5345
LIQ/SATURATES	0.1826	0.3242	0.0000
LIQ/OLEFINS	0.0000	0.0000	0.0000
LIQ/AROMATICS	1.7396	3.0883	0.0000
TOTAL	100.0	100.00	100.0
SUBGROUPING			
C1 -C4	63.87	57.19	64.60
C5 -420 F	35.13	41.03	35.40
420-700 F	0.97	1.72	0.00
C5 -END PT	36.13	42.81	35.40
FOR C5+ FRACTION			
SATURATES, WT %	32.53	21.09	22.43
OLEFINS	30.91	37.52	45.53
AROMATICS	36.57	41.40	32.04
ISO/NORMAL MOLE RATIO			
C4	1.9354	1.3966	0.9873
C5	3.4200	1.9608	1.1429
C6	2.6993	1.7849	1.3031
C4=	0.4076	0.4302	0.4253

TABLE 6 RESULT OF PROPYLENE (WITH H₂) OPERATION

RUN NO. 9710-15 (CONTINUED)
 CATALYST ECC-101 #9530-90 92 CC 50.00 GM (56.67 GM AFTER THE RUN)
 FEED C₃H₆/H₂ @ 1/4 MOLE RATIO, 481 CC/MIN H₂ FLOW
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-15-1	9710-15-2	9710-15-3
C ₃ H ₆ WHSV	0.27	0.27	0.27
HRS ON STREAMS	3.5	7.0	14.5
PRESSURE, PSIG	25	25	25
TEMP. C	408	408	408

PRDT SELECTIVITY WT %

PARAFFIN/OLEFIN M RATIO

C ₃	0.3236	0.1342	0.0840
C ₄	0.4743	0.2037	0.1397
C ₅	0.4308	0.1606	0.1405
C ₆	1.2702	0.5255	0.4697

LIQ HC COLLECTION

PHYSICAL APPEARANCE	OIL	OIL	OIL
DENSITY	---	---	---
N, REFRACTIVE INDEX	---	---	---

FIA ANALYSIS, WT %

AROMATICS	---	90.5	---
OLEFINS	---	0.0	---
SATURATES	---	9.5	---

SIMULATED DISTILLATION

10 WT % @ DEG F.	---	332	---
16	---	341	---
50	---	429	---
84	---	566	---
90	---	598	---

RANGE (16-84%)	---	225	---
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WT % @420 F	---	48.0	---
WT % @700 F	---	98.5	---

Table 7 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO.	9710-16	
CATALYST	UCC-101 #9530-90 55 CC 30.00 GM (31.10 GM AFTER THE RUN)	
FEED	C ₃ H ₆ /H ₂ @ 1/1 MOLE RATIO, 290 CC/MIN H ₂ FLOW	
	C ₃ H ₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)	
RUN & SAMPLE NO.	9710-16-1	9710-16-2
C ₃ H ₆ WHSV	1.0	1.0
HRS ON STREAMS	3.0	7.0
PRESSURE, PSIG	150	150
TEMP. C	277	277
FEED C ₃ H ₆ CC	[186.9	[435.4
HOURS FEEDING	[3.0	[7.0
EFFLNT GAS LITER	[150.6	[253.6
GM LIQ HYDROCARBON	[0.51	[1.2
WT FR. LIQ HC/FEED	.0053	.0054
MATERIAL BALANCE WT %	---	96.46
C ₃ H ₆ CONVERSION %	---	15.00
PRDT SELECTIVITY WT %		
CH ₄	.	0.1079
C ₂ HC'S	.	0.0403
C ₃ H ₈	.	15.6862
C ₄ H ₁₀	.	0.5482
C ₄ H ₈ =	.	3.5706
C ₅ H ₁₂	.	0.4144
C ₅ H ₁₀ =	.	3.1403
C ₆ H ₁₄	.	21.1521
C ₆ H ₁₂ =	.	30.6467
C ₇ - IN GAS	.	20.9406
LIQ/SATURATES	.	0.3978
LIQ/OLEFINS	.	3.0998
LIQ/AROMATICS	.	0.2552
TOTAL	.	100.00
SUBGROUPING		
C ₁ -C ₄	.	19.95
C ₅ -420 F	.	78.55
420-700 F	.	1.46
C ₅ -END PT	.	80.05
FOR C ₅ + FRACTION		
SATURATES, WT %	.	30.21
OLEFINS	.	67.69
AROMATICS	.	2.10
ISO/NORMAL MOLE RATIO		
C ₄	8.3000	8.9655
C ₅	8.9512	5.0694
C ₆	2.2362	7.4601
C ₄ =	0.1456	0.6385

TABLE 7 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO. 9710-16 (CONTINUED)
 CATALYST UCC-101 #9530-90 55 CC 30.00 GM (31.10 GM AFTER THE RUN)
 FEED C₃H₆/H₂ @ 1/1 MOLE RATIO, 290 CC/MIN H₂ FLOW
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-16-1	9710-16-2
C ₃ H ₆ WHSV	1.0	1.0
HRS ON STREAMS	3.0	7.0
PRESSURE, PSIG	150	150
TEMP. C	277	277

PRDT SELECTIVITY WT %
 PARAFFIN/OLEFIN M RATIO

C ₃	0.0267
C ₄	0.1482
C ₅	0.1283
C ₆	0.6740

LIQ HC COLLECTION

PHYSICAL APPEARANCE	OIL
DENSITY	---
N, REFRACTIVE INDEX	---
FIA ANALYSIS, WT %	
AROMATICS	6.8
OLEFINS	82.6
SATURATES	10.6
SIMULATED DISTILLATION	
10 WT % @ DEG F.	277
15	291
50	394
84	501
90	539
RANGE(16-84%)	210
WT % @420 F	60.0
WT % @700 F	98.8

Table 8 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-17
 CATALYST UCC-101 #9939-27 51 CC 30.00 GM
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 290 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-17-1	9710-17-2	9710-17-3
C3H6 WHSV	1.0	1.0	1.0
HRS ON STREAMS	4.0	7.0	11.0
PRESSURE, PSIG	150	150	150
TEMP. C	340	340	343
FEED C3H6 CC	[211.4	[185.0	[216.5
HOURS FEEDING	[3.5	[3.0	[3.5
EFFLNT GAS LITER	[118.9	[109.6	[127.9
GM LIQ HYDROCARBON	[5.19	[2.2	[1.64
WT FR. LIQ HC/FEED	.0481	.0233	.0148
MATERIAL BALANCE WT %	96.43	95.92	96.58
C3H6 CONVERSION %	2.15	17.08	14.32
PRDT SELECTIVITY WT %			
CH4	0.3473	0.3484	0.1211
C2 HC'S	0.0000	0.0000	0.0000
C3H8	23.7735	22.3668	19.7841
C4H10	1.5635	1.1107	1.0314
C4H8=	7.1992	7.9631	8.6575
C5H12	1.0453	0.7143	0.6312
C5H10=	5.7367	6.2151	6.7000
C6H14	7.8142	8.3348	8.5913
C6H12=	12.6294	17.9358	20.2246
C7+ IN GAS	18.7235	20.3773	23.2663
LIQ/SATURATES	0.6774	0.0000	0.6376
LIQ/OLEFINS	7.9590	3.5853	4.8477
LIQ/AROMATICS	12.5312	11.0484	5.5073
TOTAL	100.0	100.00	100.0
SUBGROUPING			
C1 -C4	32.88	31.79	29.59
C5 -420 F	61.53	62.18	65.99
420-700 F	5.59	5.90	4.00
C5 -END PT	67.12	68.21	70.41
FOR C5+ FRACTION			
SATURATES, WT %	15.10	13.27	15.92
OLEFINS	49.71	47.98	59.70
AROMATICS	35.19	38.75	24.38
ISO/NORMAL MOLE RATIO			
C4	4.5020	3.9380	4.9176
C5	6.3333	4.5932	4.9048
C6	2.0395	1.4443	1.3051
C4=	0.5288	0.5610	0.5793

TABLE 2 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-17 (CONTINUED)
 CATALYST UCC-101 #9939-27 51 CC 30.00 GM
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 290 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-17-1	9710-17-2	9710-17-3
C3H6 WHSV	1.0	1.0	1.0
HRS ON STREAMS	4.0	7.0	11.0
PRESSURE, PSIG	150	150	150
TEMP. C	340	340	343
PRDT SELECTIVITY WT %			
PARAFFIN/OLEFIN M RATIO			
C3	0.0727	0.0443	0.0318
C4	0.2096	0.1346	0.1150
C5	0.1771	0.1117	0.0916
C6	0.6043	0.4538	0.4149
LIQ HC COLLECTION			
PHYSICAL APPEARANCE OIL			
DENSITY	0.790	---	---
N, REFRACTIVE INDEX	1.4498	---	---
FIA ANALYSIS, WT %			
AROMATICS	59.2	75.5	50.1
OLEFINS	37.6	24.5	44.1
SATURATES	3.2	0.0	5.8
SIMULATED DISTILLATION			
10 WT % @ DEG F.	235	277	260
16	265	289	278
50	346	397	390
84	459	520	548
90	495	569	615
RANGE(16-84%)	194	231	270
WT % @420 F	73.6	58.8	59.8
WT % @700 F	100.0	99.1	96.4

Table 9 PROPYLENE(WITH H2) OPERATION

RUN NO. 9972-01
 CATALYST LZ-105-6 #9939-01 50 CC 30.0 GM (33.16 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 290 CC/MIN H2 FLOW, C3= FLOW 7 HR/D
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9972-01-1	9972-01-2	9972-01-3	9972-01-4	9972-01-5
C3H6 WHSV	1.1	1.1	1.1	1.1	1.1
HRS ON STREAMS	2.5	7.5	11.0	14.0	17.5
PRESSURE, PSIG	152	148	144	142	143
TEMP. C	278	279	307	307	336
FEED C3H6 CC	131.51	314.0	198.2	195.07	195.07
HOURS FEEDING	2.0	5.0	3.0	3.0	3.0
EFFLNT GAS LITER	45.2	116.9	71.1	70.3	74.3
GM LIQ HYDROCARBON	32.77	93.30	42.13	51.31	32.75
WT FR. LIQ HC/FEED	.4882	.5821	.4165	.5153	.3289
MATERIAL BALANCE WT %	83.99	90.23	80.26	90.80	82.83
C3H6 CONVERSION %	93.70	96.19	94.65	94.65	95.27
PRDT SELECTIVITY WT %					
CH4	0.0509	0.0387	0.1174	0.0911	0.2584
C2 HC'S	0.1635	0.1226	0.0000	0.2999	0.7806
C3H8	6.7851	9.0719	6.4647	4.4276	10.5096
C4H10	5.3615	2.8712	9.2434	6.6405	16.0236
C4H8=	3.5921	3.7820	4.7222	4.6925	4.3213
C5H12	3.9458	2.2712	6.9334	5.3198	10.2667
C5H10=	4.0046	4.2365	4.4360	4.7022	3.3246
C6H14	3.0899	2.1888	4.2713	3.6977	5.0462
C6H12= & CYCLO'S	1.8936	2.0526	1.9870	1.5435	0.9596
C7+ IN GAS	5.2618	4.6779	4.9821	6.3212	5.4495
LIQ HC'S	65.8512	69.1784	56.8424	62.1638	43.0597
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C1 -C4	15.95	15.89	20.55	16.15	31.89
C5 -420 F	70.61	69.14	69.79	73.59	60.51
420-700 F	13.43	14.42	9.38	10.26	7.43
C5 -END PT	84.05	84.11	79.45	83.85	68.11

Table 9 (cont.)

ISC/NORMAL MOLE RATIO					
C4	1.1577	1.2819	1.7247	1.8769	1.5071
C5	2.7926	2.7286	2.7825	2.8644	2.5075
C6	2.8870	2.1805	3.0477	2.7869	3.5047
C4=	0.4146	0.3881	0.4389	0.4324	0.4413
PARAFFIN/OLEFIN M RATIO					
C3	0.9677	2.1937	1.0930	0.7481	2.0319
C4	1.4408	0.7328	1.8895	1.3660	3.5794
C5	0.9578	0.5211	1.5193	1.0997	3.0018
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLEAR OIL	CLEAR OIL	OIL, LT BL	OIL, LT BL	OIL, YL GR
DENSITY	0.759	0.761	0.777	0.755	0.797
N, REFRACTIVE INDEX	1.4346	1.4337	1.4457	1.4399	1.4684
SIMULATED DISTILLATION					
10 WT % @ DEG F.	172	183	157	162	159
16	204	210	192	193	195
50	315	321	297	300	299
84	445	453	426	423	431
90	492	503	475	468	477
RANGE(16-84%)	241	243	234	230	236
WT % @420 F	79.6	78.2	83.0	83.5	82.4
WT % @700 F	100.0	99.2	99.5	100.0	99.6

TABLE 9 (cont) PROPYLENE (WITH H₂) OPERATION

RUN NO. 9972-01
 CATALYST LZ-105-6 #9939-01 50 CC 30.0 GM (33.16 GM AFTER THE RUN)
 FEED C₃H₆/H₂ @ 1/1 MOLE RATIO, 290 CC/MIN H₂ FLOW, C₃= FLOW 7 HR/D
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9972-01-6	9972-01-7	9972-01-8	9972-01-9	9972-1-10
C ₃ H ₆ WHSV	1.1	1.1	1.1	1.1	1.1
HRS ON STREAMS	21.0	25.0	29.0	32.5	37.5
PRESSURE, PSIG	145	147	145	147	150
TEMP. C	337	370	370	282	282
FEED C ₃ H ₆ CC	223.39	230.94	247.30	193.81	292.60
HOURS FEEDING	3.5	3.5	4.0	3.0	4.5
EFFLNT GAS LITER	85.4	90.3	101.7	72.9	109.2
GM LIQ HYDROCARBON	49.15	29.72	44.41	58.77	86.62
WT FR. LIQ HC/FEED	.4311	.2521	.3518	.5941	.5800
MATERIAL BALANCE WT %	90.36	85.41	92.38	95.08	93.74
C ₃ H ₆ CONVERSION %	95.04	95.20	97.06	86.37	89.19
PRDT SELECTIVITY WT %					
CH ₄	0.2065	0.5748	0.4903	0.0294	0.0276
C ₂ HC'S	0.6403	1.5026	1.3124	0.0200	0.0762
C ₃ H ₈	7.1552	17.8821	14.0543	3.0490	8.1101
C ₄ H ₁₀	12.1173	21.1874	16.9210	1.1281	1.4564
C ₄ H ₈ =	4.7449	4.1059	4.0579	4.7259	4.1347
C ₅ H ₁₂	8.4045	10.2999	9.4264	0.9042	1.0794
C ₅ H ₁₀ =	3.8333	2.3068	2.8045	4.8598	4.3935
C ₆ H ₁₄	4.3723	4.1523	4.2326	1.5975	1.6156
C ₆ H ₁₂ = & CYCLO'S	1.5794	0.8800	0.8119	2.6501	2.6697
C ₇ + IN GAS	5.2174	5.2134	5.6469	5.8134	5.2274
LIQ HC'S	51.7287	31.8948	40.2417	75.2225	71.2092
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C ₁ -C ₄	24.86	45.25	36.84	8.95	13.81
C ₅ -420 F	67.17	47.38	56.89	75.10	71.10
420-700 F	7.97	7.24	6.28	15.87	15.03
C ₅ -END PT	75.14	54.75	63.16	91.05	86.19

Table 9 (cont.)

ISO/NORMAL MOLE RATIO						
C4	1.6531	1.3480	1.3967	1.1239	0.5756	
C5	2.5364	2.7891	2.5174	2.4760	1.5747	
C6	2.9060	4.8999	3.6158	1.5029	1.2075	
C4*	0.4366	0.4201	0.4834	0.3231	0.3400	
PARAFFIN/OLEFIN M RATIO						
C3	1.3100	3.4063	4.4573	0.1845	0.6397	
C4	2.4652	4.9813	4.0253	0.2304	0.3400	
C5	2.1312	4.3403	3.2672	0.1809	0.2388	
LIQ HC COLLECTION						
PHYS. APPEARANCE	OIL, YL	GR	OIL, YL	GR	OIL, YL	GR
DENSITY	0.773		0.839		0.815	
N, REFRACTIVE INDEX	1.4562		1.4972		1.4732	
SIMULATED DISTILLATION						
10 WT % @ DEG F.	155	188	161	188	187	
16	191	224	196	212	212	
50	294	321	299	324	323	
84	416	457	417	449	449	
90	463	489	466	494	494	
RANGE (16-84%)	225	233	221	237	237	
WT % @420 F	84.6	76.9	84.4	78.8	78.8	
WT % @700 F	100.0	99.6	100.0	99.9	99.9	

TABLE 9 C3H6 PROPYLENE(WITH H2) OPERATION

RUN NO. 9972-01
 CATALYST LZ-105-6 #9939-01 50 CC 30.0 GM (33.16 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 290 CC/MIN H2 FLOW, C3= FLOW 7 HR/D
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9972-1-11	9972-1-12	9972-1-13	9972-1-14	9972-1-15
C3H6 WHSV	1.1	1.1	1.1	1.1	1.0
HRS ON STREAM5	40.5	44.0	48.0	52.0	55.5
PRESSURE, PSIG	147	74	73	299	303
TEMP. C	282	279	281	283	289
FEED C3H6 CC	186.26	188.78	258.63	219.61	210.80
HOURS FEEDING	3.0	3.0	4.0	3.5	3.5
EFFLNT GAS LITER	74.1	77.2	104.2	79.9	80.4
GM LIQ HYDROCARBON	57.36	53.72	69.70	45.24	59.46
WT FR. LIQ HC/FEED	.6034	.5575	.5280	.4036	.5526
MATERIAL BALANCE WT %	100.21	97.00	98.24	71.43	91.70
C3H6 CONVERSION %	84.11	80.99	78.37	85.67	89.09
PRDT SELECTIVITY WT %					
CH4	0.0248	0.0167	0.0190	0.0809	0.0688
C2 HC'S	0.0713	0.0594	0.0659	0.1805	0.1529
C3H6	2.6535	2.2477	2.1299	6.6429	4.7074
C4H10	0.7715	0.6357	0.6745	1.9969	1.7005
C4H8=	5.0642	6.2363	6.6248	4.0554	3.6196
C5H12	0.7983	0.5001	0.5482	1.2119	1.1676
C5H10=	4.8852	5.8271	6.2591	4.3761	3.9528
C6H14	1.7032	1.6093	1.7335	1.9060	4.5162
C6H12= & CYCLO'S	3.4710	3.6054	3.5951	3.0626	2.6430
C7+ IN GAS	6.0648	6.7315	8.6878	6.1712	5.0870
LIQ HC'S	74.4924	72.5307	69.6620	70.3155	72.4052
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C1 -C4	8.5852	9.1957	9.5141	12.9566	10.2552
C5 -420 F	75.3244	78.1839	78.7827	68.4098	72.7296
420-700 F	16.0159	12.6204	11.7032	17.8602	16.6532
C5 -END PT	91.4148	90.8043	90.4859	87.0434	89.7448

Table 9 (cont.)

ISO/NORMAL MOLE RATIO						
C4	1.1515	1.2932	1.4982	0.6539	0.8371	
C5	2.3461	2.7149	2.6332	2.1944	2.4042	
C6	1.4732	1.2844	1.2987	1.4945	6.2711	
C4=	0.2901	0.2939	0.3045	0.3169	0.3289	
PARAFFIN/OLEFIN M RATIO						
C3	0.1341	0.0913	0.0737	0.3865	0.3679	
C4	0.1471	0.0984	0.0983	0.4753	0.4535	
C5	0.1588	0.0834	0.0851	0.2692	0.2891	
LIQ HC COLLECTION						
PHYS. APPEARANCE	LT	YL	OIL	LT	YL	OIL
DENSITY		0.726	0.719	0.719	0.713	0.783
N, REFRACTIVE INDEX	1.4309	1.4288	1.4289	1.4304	1.4320	
SIMULATED DISTILLATION						
10 WT % @ DEG F.	189	178	173	205	193	
16	213	209	208	233	217	
50	324	308	305	341	328	
84	450	427	424	475	461	
90	495	469	466	524	509	
RANGE (16-84%)	237	218	216	242	244	
WT % @420 F	78.4	82.6	83.2	73.5	76.5	
WT % @700 F	99.9	100.0	100.0	98.9	99.5	

Table 9 (cont.) PROPYLENE(WITH H2) OPERATION

RUN & SAMPLE NO.	9972-1-16	9972-1-17	9972-1-18	9972-1-19	9972-1-20
C3H6 WHSV	1.0	1.0	1.1	1.1	1.1
HRS ON STREAMS	59.0	62.0	65.5	68.5	72.5
PRESSURE, PSIG	307	300	150	153	52
TEMP. C	371	369	363	364	371
FEED C3H6 CC	182.48	183.11	188.78	185.63	221.50
HOURS FEEDING	3.0	3.0	3.0	3.0	3.5
EFFLNT GAS LITER	70.0	70.3	76.0	75.5	96.1
GM LIQ HYDROCARBON	8.81	14.80	30.79	36.92	41.22
WT FR. LIQ HC/FEED	.0946	.1584	.3195	.3897	.3646
MATERIAL BALANCE WT %	90.11	87.50	83.58	95.97	94.02
C3H6 CONVERSION %	98.05	97.25	93.47	94.22	89.16
PRDT SELECTIVITY WT %					
CH4	1.8615	1.3055	0.3256	0.4916	0.0142
C2 HC'S	4.4719	3.1024	0.0000	0.0000	0.9910
C3H6	47.1570	35.5407	10.7354	10.8825	8.1611
C4H10	20.5693	20.6111	15.9695	14.9539	12.5917
C4H8=	1.1714	1.9056	5.7303	5.1026	9.8380
C5H12	6.5860	8.1639	9.5202	8.7946	6.7556
C5H10=	0.4300	1.2504	4.0157	3.4684	5.9569
C6H14	2.6697	3.2520	4.6131	4.3146	3.7071
C6H12= & CYCLO'S	0.3932	0.5338	1.4037	1.4463	1.9894
C7+ IN GAS	3.2135	4.4145	5.3114	5.8777	5.9876
LIQ HC'S	11.4765	19.9201	42.3751	44.6677	44.0073
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C1 -C4	75.23	62.47	32.76	31.43	31.60
C5 -420 F	20.41	32.42	60.03	62.32	63.08
420-700 F	4.18	5.12	7.20	6.25	5.32
C5 -END PT	24.77	37.53	67.24	68.57	68.40

Table 9 (cont.)

ISC/NORMAL MOLE RATIO										
C4	0.9991	1.0912	1.4695	1.4744	1.7370					
C5	2.8005	2.9919	2.5089	2.6507	2.6828					
C6	6.3846	5.4527	3.3978	3.6525	3.1930					
C4=	0.4617	0.4555	0.4329	0.4290	0.4345					
PARAFFIN/OLEFIN M RATIO										
C3	23.3722	12.2638	1.4624	1.6976	0.6412					
C4	16.9506	10.4408	2.6902	2.8290	1.2355					
C5	14.8880	6.3466	2.3045	2.4648	1.1024					
LIQ HC COLLECTION										
PHYS. APPEARANCE	LT	YG OIL	LT	YG OIL	LT	GR OIL	YL	GR OIL	YL	GR OIL
DENSITY		0.925		0.853		0.786		0.794		0.825
N, REFRACTIVE INDEX		1.5142		1.5004		1.4766		1.4610		1.4651
SIMULATED DISTILLATION										
10 WT % @ DEG F.		232		199		160		155		158
16		265		233		196		193		192
50		363		327		299		292		288
84		488		473		428		407		398
90		528		500		472		451		437
RANGE (16-84%)		223		240		232		214		206
WT % @420 F		62.0		74.3		83.0		86.0		87.9
WT % @700 F		98.4		100.0		100.0		100.0		100.0

Table 9 (cont.) PROPYLENE(WITH H2) OPERATION

RUN NO. 9972-01
 CATALYST LZ-105-6 #9939-01 50 CC 30.0 GM (33.16 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 290 CC/MIN H2 FLOW, C3= FLOW 7 HR/D
 C3H6 Mw= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO. 9972-1-21
 =====

C3H6 WHSV 1.8
 HRS ON STREAMS 75.5
 PRESSURE, PSIG 47
 TEMP. C 371

FEED C3H6 CC 190.67
 HOURS FEEDING 3.0
 EFFLNT GAS LITER 80.0
 GM LIQ HYDROCARBON 29.44
 WT FR. LIQ HC/FEED .3025

MATERIAL BALANCE WT % 85.39
 C3H6 CONVERSION % 96.77
 PRDT SELECTIVITY WT %

CH4 0.0137
 C2 HC'S 0.0000
 C3H8 16.2809
 C4H10 13.6646
 C4H8= 7.8575
 C5H12 7.5489
 C5H10= 5.3913
 C6H14 3.9106
 C6H12= & CYCLO'S 1.5540
 C7+ IN GAS 6.7336
 LIQ HC'S 37.0448

TOTAL 100.00
 SUBGROUPING
 C1 -C4 37.82
 C5 -420 F 57.70
 420-700 F 4.49
 C5 -END PT 62.18

Table 9 (cont.)

ISO/NORMAL MOLE RATIO

C4	1.2401
C5	2.1048
C6	2.2465
C4=	0.5205

PARAFFIN/OLEFIN M RATIO

C3	4.6953
C4	1.6787
C5	1.3611

LIQ HC COLLECTION

PHYS. APPEARANCE YL GR OIL

DENSITY 0.772

N, REFRACTIVE INDEX 1.4617

SIMULATED DISTILLATION

10 WT % @ DEG F.	159
16	192
50	287
84	406
90	438

RANGE (76-842) 214

WT % @420 F 87.9

WT % @700 F 100.0

Table 10

PROPYLENE(WITH H2) OPERATION

RUN NO. 9972-2
 CATALYST LZ-105-6 #9939-01 50 CC 35.0 GM (34.27 GM AFTER THE RUN)
 FEED H2:C3H6:H2O @ 1:1:2 MOLE RATIO, 0.5 C3H6 WHSV, CONTINUOUS OVERNITE
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)
 TARGET FLOW: C3H6 34.3 CC/HR H2 168 CCMN, 10.08 L/HR H2O 15 CC/HR
 ACTUAL FLOW: 27.77 CCHR EFFLUENT 10.70 L/HR 10.63 CC/HR

RUN & SAMPLE NO.	9972-2-1	9972-2-2	9972-2-3	9972-2-4	9972-2-5
C3H6 WHSV	0.4	0.4	0.4	0.4	0.4
HRS ON STREAMS	7.5	24.5	29.5	47.5	53.
PRESSURE, PSIG	174	154	162	158	176
TEMP. C	410	410	408	409	409
FEED C3H6 CC	213.95	487.67	132.14	503.4	138.44
HOURS FEEDING	7.5	16.83	5.17	18.0	5.5
EFFLNT GAS LITER	82.0	187.5	47.3	198.0	47.9
GM AQUEDUS LAYER	73.59	176.58	50.10	182.02	57.73
GM LIQ HYDROCARBON	25.02	63.46	18.87	69.68	20.61
WT FR. LIQ HC/FEED	.2291	.2549	.2798	.2712	.2917
MATERIAL BALANCE WT %	94.99	96.22	97.55	97.05	94.42
C3H6 CONVERSION %	97.90	96.00	96.97	97.03	97.19
PRDT SELECTIVITY WT %					
CH4	0.7609	0.3632	0.3466	0.3315	0.3093
C2 HC'S	2.2051	1.4594	1.3206	1.3695	1.2670
C3H8	30.7507	22.1348	21.0171	21.3033	19.4161
C4H10	25.4877	28.4025	27.4300	28.3054	26.3262
C4H8=	1.2135	2.3285	2.0277	2.0841	2.0393
C5H12	6.9660	9.7110	9.8116	10.1027	9.7838
C5H10=	0.0228	0.0533	0.0408	0.0458	0.0467
C6H14	1.1132	1.7058	1.7949	1.7990	1.9180
C6H12= & CYCLO'S	0.2425	0.4559	0.4736	0.5002	0.5593
C7+ IN GAS	5.8875	5.4898	4.9319	5.0625	5.1790
LIQ HC'S	25.3472	27.8960	30.8052	29.0959	33.1554
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C1 -C4	60.4208	54.6884	52.1421	53.3939	49.3579
C5 -420 F	34.3830	42.4941	44.0997	44.1912	47.1974
420-700 F	5.1962	2.8175	3.7582	2.4150	3.4447
C5 -END PT	39.5792	45.3116	47.8579	46.6061	50.6421

Table 10 (cont.)

ISO/NORMAL MOLE RATIO					
C4	2.0769	2.4555	2.3613	2.4110	2.3919
C5	5.4191	5.6217	5.3059	5.6500	5.5687
C6	7.6082	7.6459	7.3716	7.7657	7.4144
C4=	0.4614	0.4953	0.4677	0.4910	0.4850
PARAFFIN/OLEFIN M RATIO					
C3	13.8700	5.1500	6.5519	6.8021	6.5335
C4	20.2750	11.7749	13.0582	13.1106	12.4617
C5	297.3053	177.1607	233.8688	214.3594	203.8476
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL	OIL	OIL	OIL	OIL
DENSITY	0.888	0.863	0.862	0.849	0.852
N, REFRACTIVE INDEX	1.5114	1.4996	1.4957	1.4975	1.4906
SIMULATED DISTILLATION					
10 WT % @ DEG F.	231	231	221	218	209
16	236	235	233	234	233
50	293	289	289	290	290
84	439	389	396	372	387
90	475	430	435	405	425
RANGE (16-84%)	203	154	163	138	154
WT % @420 F	79.5	89.0	88.0	91.7	89.6
WT % @700 F	100.0	100.0	100.0	100.0	100.0

Table 10 (cont.) PROPYLENE (WITH H₂) OPERATION

RUN NO. 9972-2
 CATALYST LZ-105-6 #9939-01 50 CC 35.0 GM (34.27 GM AFTER THE RUN)
 FEED H₂:C₃H₆:H₂O @ 1:1:2 MOLE RATIO, 0.5 C₃H₆ WHSV, CONTINUOUS OVERNITE
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)
 TARGET FLOW: C₃H₆ 34.3 CC/HR H₂ 168 CC/MN, 10.08 L/HR H₂O 15 CC/HR
 ACTUAL FLOW: 27.76 CCHR EFFLUENT 10.70 L/HR 10.63 CC/HR

RUN & SAMPLE NO.	9972-2-6	9972-2-7
	=====	=====
C ₃ H ₆ WHSV	0.4	0.4
HRS ON STREAMS	71.8	79.1
PRESSURE, PSIG	168	168
TEMP. C	410	409
FEED C ₃ H ₆ CC	516.62	223.37
HOURS FEEDING	18.75	7.417
EFFLNT GAS LITER	205.3	80.4
GM AQUEOUS LAYER	194.21	75.49
GM LIQ HYDROCARBON	75.98	30.74
WT FR. LIQ HC/FEED	.2953	.2696
MATERIAL BALANCE WT %	109.24	99.83
C ₃ H ₆ CONVERSION %	96.47	96.39
PRDT SELECTIVITY WT %		
CH ₄	0.2351	0.2629
C ₂ HC'S	1.1456	1.2075
C ₃ H ₈	17.7434	18.8471
C ₄ H ₁₀	30.3359	28.7799
C ₄ H ₈ =	2.8610	2.7738
C ₅ H ₁₂	13.1666	11.5828
C ₅ H ₁₀ =	0.0674	0.0600
C ₆ H ₁₄	2.2889	2.3055
C ₆ H ₁₂ = & CYCLO'S	0.6315	0.6871
C ₇ + IN GAS	3.8993	4.7166
LIQ HC'S	27.6253	28.7768
TOTAL	100.00	100.00
SUBGROUPING		
C1 -C4	52.3210	51.8712
C5 -420 F	46.1596	46.2583
420-700 F	1.5194	1.8705
C5 -END PT.	47.6790	48.1288

Table 10 (cont.)

ISO/NORMAL MOLE RATIO		
C4	2.2820	2.3460
C5	5.5353	4.9806
C6	7.5869	6.7056
C4=	0.4842	0.4699
PARAFFIN/OLEFIN M RATIO		
C3	4.7488	4.9172
C4	10.2355	10.0159
C5	189.8147	187.8043
LIQ HC COLLECTION		
PHYS. APPEARANCE	OIL	OIL
DENSITY	0.837	0.840
N, REFRACTIVE INDEX	1.4841	1.4920
SIMULATED DISTILLATION		
10 WT % @ DEG F.	180	197
16	230	234
50	287	291
84	354	358
90	385	392
RANGE (16-84%)	124	124
WT % @420 F	94.5	93.5
WT % @700 F	100.0	100.0