

Table 1 RESULT OF METHANOL OPERATION

RUN & SAMPLE NO. CATALYST	9710-1-1 LZ-105-6	9710-2-1 LZ-105-6	9710-3-1 ZSM-5	9710-4-1 UCC-101	9710-5-1 UCC-101
CH3OH WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAM	20.0	18.7	7.8	6.7	5.0
PRESSURE, PSIG	322	307	303	322	298
TEMP. C	370	365	369	377	372
FEED ALCOHOL CC HOURS FEEDING	[443.0 [20.083	[460.0 [18.733	[69.0 [3.167	[61.0 [2.467	[78.5 [3.0
EFFLNT GAS LITER	[166.6	[186.52	[32.4	[33.93	[41.0
GM AQUEOUS LAYER	[169.51	[156.69	[26.29	[17.38	[27.03
GM HYDROCARBON APPEARANCE OF HC	[44.67 CRYSTL & SOME OIL	[42.30 CRYSTL & SOME OIL	[5.93 CRYSTL	[0.71 CRYSTL	[2.27
MATERIAL BALANCE					
ON C	.737		.784		.828
H	.816		.838		.892
O	.897		.861		.930
CONSISTENCY RATIO	.823		.913		.846
CH3OH CONVERSION	99.87		99.92		84.61
PRODT DISTRIBUTN, %C-ATOM					
DIMETHYL ETHER	0.00		0.00		63.96
HYDROCARBONS	98.93		98.86		35.64
OTHERS (CO, CO2)	1.07		1.14		0.40
HC SELECTIVITY, %C-ATOM					
CH4	0.74		1.30		15.31
C2 HC'S	2.26		2.45		9.34
C3	18.12		13.97		3.18
C3=	0.55		0.59		8.65
C4	18.99		24.72		5.00
C4= & C4==	0.34		0.37		5.40
C5	9.33		13.63		4.08
C5=	0.11		0.16		0.71
C6H14	3.80		6.03		4.33
C6H12	0.09		0.01		0.12
C7+	3.05		3.29		8.94
OIL & SOLIDS	42.62		33.47		34.94
SUBSUM C5+	59.00		56.59		53.12
FRACTN CONVTD C AS C5+ SIMULATED DISTILLATION	0.584		.559		.189
10 WT % @ DEG F	331	331	380	428	424
16	334	334	383	457	431
50	390	391	390	504	505
84	397	398	394	691	653
90	398	400	397	701	697
RANGE(16-84°)	63	64	11	234	222

TABLE 1 RESULT OF METHANOL OPERATION

RUN & SAMPLE NO. CATALYST	9710-5-2 UCC-101	9710-6-2 Y-82	9710-7-A Y-82	9710-7-1 Y-82	9710-7-2 Y-82
CH3OH WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAM	9.0	6.5	1.5	6.5	12.5
PRESSURE, PSIG	299	294	300	300	302
TEMP. C	400	373	401	401	400
FEED ALCOHOL CC	[79.0	[92.0	[40.0	[130.0	[132.0
HOURS FEEDING	[3.00	[3.50	[1.5	[5.0	[5.0
EFFLNT GAS LITER	[46.5	[51.6	[19.8	[74.1	[74.9
GM AQUEOUS LAYER	[25.00	[30.18	[6.24	[44.38	[43.87
GM HYDROCARBON APPEARANCE OF HC	[0.32	[0.30	[.0014	[0.29	[0.02
MATERIAL BALANCE					
ON C		.856	.531	.842	.793
H		.893	.552	.909	.839
O		.922	.423	.962	.877
CONSISTENCY RATIO		.874	1.276	.788	.830
CH3OH CONVERSION		77.43	96.48	76.48	71.25
PRODT DISTRIBUTN, % C-ATOM					
DIMETHYL ETHER		92.06	10.02	94.09	96.80
HYDROCARBONS		7.86	89.64	5.48	2.85
OTHERS(CO, CO2)		0.08	0.34	0.43	0.35
HC SELECTVTY, % C-ATOM					
CH4		22.63	11.96	48.08	56.68
C2 HC'S		13.59	11.14	8.38	6.19
C3		2.53	21.38	1.02	0.81
C3=		13.57	4.16	5.07	3.39
C4		3.40	28.51	0.50	0.00
C4= & C4==		7.86	2.46	2.25	1.62
C5		2.61	12.32	0.26	0.00
C5=		2.74	0.82	0.71	0.56
C6H14		0.00	4.07	0.31	0.28
C6H12		0.00	0.07	0.00	0.00
C7+		12.15	3.08	14.37	27.48
OIL & SOLIDS		18.90	0.03	19.07	3.0
SUBSUM C5+		36.40	20.39	34.72	31.32
FRACTN CONVD C AS C5+		.0286	.1828	.019	.0089
SIMULATED DISTILLATION					
10 WT % @ DEG F	429	412	449	426	
16	458	428	474	437	
50	506	493	497	499	
84	653	591	698	644	
90	692	643	766	682	
RANGE(16-84%)	195	163	224	207	

TABLE 1 RESULT OF METHANOL OPERATION

RUN & SAMPLE NO. CATALYST	9710-8-A UCC-101	9710-8-1 UCC-101	9710-8-2 UCC-101	9710-9-1 UCC-101	9710-9-2 UCC-101
CH3OH WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAM	2.0	7.0	12.0	6.0	11.0
PRESSURE, PSIG	105	60	51	25	28
TEMP. C	372	371	402	370	408
FEED ALCOHOL CC	[53.0	[79.0	[132.0	[79.0	[77.5
HOURS FEEDING	[2.0	[3.0	[5.0	[3.0	[3.0
EFFLNT GAS LITER	[22.0	[43.7	[79.0	[41.8	[45.4
GM AQUEOUS LAYER	[14.21	[23.85	[42.88	[24.80	[24.50
GM HYDROCARBON	[0.06	[0.40	[0.20	[0.20	[0.47
APPEARANCE OF HC					
MATERIAL BALANCE					
ON C	.498	.666	.914	.783	.855
H	.606	.730	.969	.831	.910
O	.644	.777	1.001	.854	.942
CONSISTENCY RATIO	.738	.772	.849	.865	.845
CH3OH CONVERSION	89.94	78.95	77.57	78.83	79.75
PRODT DISTRIBTN, % C-ATOM					
DIMETHYL ETHER	34.68	86.77	91.02	83.38	85.63
HYDROCARBONS	64.99	12.78	7.68	16.40	12.56
OTHERS(CO, CO2)	0.33	0.45	1.30	0.22	1.81
HC SELECTVTY, % C-ATOM					
CH4	9.90	30.02	63.42	19.97	53.39
C2 HC'S	14.36	11.38	10.00	14.57	9.45
C3	5.86	1.86	1.08	1.53	0.93
C3=	10.02	10.94	5.51	18.20	5.04
C4	18.17	1.91	0.40	4.12	0.37
C4= & C4==	6.53	6.18	2.66	11.64	2.40
C5	14.45	1.43	0.18	3.16	0.20
C5=	2.23	2.34	0.74	4.20	0.74
C6H14	6.14	1.43	0.36	2.74	0.39
C6H12	0.15	0.05	0.00	0.19	0.00
C7+	10.93	9.72	7.26	12.07	5.72
OIL & SOLIDS	1.25	22.73	8.39	7.54	21.37
SUBSUM C5+	35.15	37.70	16.93	29.90	28.42
FRACTN CONVTD C AS C5+	.228	.048	.013	.049	.0357
SIMULATED DISTILLATION					
10 WT % @ DEG F	408	475	479	384	479
16	425	482	482	403	482
50	486	490	497	479	490
84	502	693	696	507	694
90	508	698	729	512	705
RANGE(16-84%)	77	211	214	24	212

TABLE 1 RESULT OF METHANOL OPERATION

RUN NO.	9710-10				
CATALYST:	ZSM-5 #9530-89 40 CC 20 GM				
FEED:	CH ₃ OH/N ₂ @ .63/.37 MOLE RATIO				
RUN & SAMPLE NO.	R-10-1	R-10-2	R-10-3	R-10-4	R-10-5
CH ₃ OH WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAM	1.0	2.0	4.0	7.0	9.0
PRESSURE, PSIG	25	25	25	25	25
TEMP. C	369	370	370	370	409
FEED ALCOHOL CC	[26.0	[26.0	[52.0	[78.0	[51.0
HOURS FEEDING	[1.0	[1.0	[2.0	[3.0	[2.0
EFFLNT GAS LITER	[10.9	[10.7	[22.1	[33.6	[23.6
GM AQUEOUS LAYER	[5.82	[9.36	[19.34	[30.52	[18.9
GM HYDROCARBON	[1.88	[2.39	[5.77	[8.29	[5.17
APPEARANCE OF HC	[OIL WITH CRYSTAL	[OIL WITH CRYSTAL	[OIL WITH CRYSTAL	[OIL WITH CRYSTAL	[OIL ONLY
MATERIAL BALANCE					
ON C	.697	.743	.859	.834	.861
H	.637	.806	.854	.875	.876
O	.531	.847	.828	.900	.860
CONSISTENCY RATIO	1.321	.878	1.040	.928	1.004
CH ₃ OH CONVERSION	97.14	97.39	96.41	94.09	94.31
PRODT DISTRIBTN, % C-ATOM					
DIMETHYL ETHER	0.00	0.00	0.00	0.00	0.00
HYDROCARBONS	99.02	99.14	99.26	99.36	99.10
OTHERS (CO, CO ₂)	0.98	0.86	0.74	0.64	0.90
HC SELECTVITY, % C-ATOM					
CH ₄	1.27	1.12	1.00	1.03	1.68
C ₂ HC'S	2.62	2.28	2.06	2.28	2.98
C ₃	27.67	24.42	21.54	20.12	22.73
C ₃ =	0.57	0.54	0.57	0.78	1.54
C ₄	23.52	21.54	22.26	23.15	21.22
C ₄ = & C ₄ **	0.30	0.30	0.52	0.42	0.86
C ₅	7.09	6.62	7.10	8.08	6.33
C ₅ =	0.04	0.03	0.24	0.05	0.16
C ₆ H ₁₄	1.58	1.47	1.82	0.82	1.43
C ₆ H ₁₂	0.03	0.04	0.15	0.03	0.03
C ₇ +	1.45	1.42	2.01	1.60	2.34
OIL & SOLIDS	33.68	40.22	40.72	41.65	38.71
SUBSUM C ₅ +	43.87	49.80	52.04	52.23	49.00
FRACTN CONVTD C AS C ₅ +	.4344	.4937	.5165	.5190	.4856
SIMULATED DISTILLATION ON OIL & SOLIDS					
10 WT % @ DEG F	338	335	335	330	287
16	382	361	341	337	326
50	398	398	400	395	386
84	408	408	411	405	402
90	438	435	415	408	407
RANGE (16-84%)	26	47	70	68	76
FIA ANALYSIS ON OIL, WT %					
AROMATICS					99.3
OLEFINS					0.2
SATURATES					0.5

TABLE I RESULT OF METHANOL OPERATION

RUN NO.	9710-10				
CATALYST	ZSM-5 #9530-89 40 CC 20 GM				
FEED	CH ₃ OH/NO @ .63/.37 MOLE RATIO				
RUN & SAMPLE NO.	R-10-6	R-10-7	R-10-8	R-10-9	R-10-10
CH ₃ OH WHSV	1.0	3.0	3.0	3.0	3.0
HRS ON STREAM	14.0	21.0	26.5	31.5	32.5
PRESSURE, PSIG	26	25	25	26	25
TEMP. C	410	410	412	370	368
FEED ALCOHOL CC	[129.0	[440.0	[406.0	[152.0	[149.0
HOURS FEEDING	[5.0	[6.0	[5.5	[2.07	[2.0
EFFLNT GAS LITER	[57.9	[238.4	[218.1	[77.813	[59.1
GM AQUEOUS LAYER	[49.6	[168.18	[175.50	[68.03	[61.04
GM HYDROCARBON	[14.23	[30.65	[31.66	[25.34	[11.39
APPEARANCE OF HC	OIL ONLY	OIL ONLY	OIL ONLY	CRSTL+OIL	OIL+CRSTL
MATERIAL BALANCE					
ON C	.772	.740	.838	.789	.658
H	.815	.828	.925	.888	.777
O	.876	.884	.976	.990	.898
CONSISTENCY RATIO	.882	.838	.858	.797	.732
CH ₃ OH CONVERSION	96.58	92.04	88.82	90.78	90.94
PRDCT DISTRIBTN, % C-ATOM					
DIMETHYL ETHER	0.00	0.00	0.00	0.00	0.00
HYDROCARBONS	99.62	99.49	99.70	99.79	99.82
OTHERS(CO, CO ₂)	0.38	0.51	0.30	0.21	0.18
HC SELECTIVITY, % C-ATOM					
CH ₄	0.96	1.25	1.13	0.72	0.67
C ₂ HC'S	3.01	4.01	3.66	4.31	4.62
C ₃	10.21	12.26	10.97	6.66	6.45
C ₃ =	3.34	4.04	4.34	2.50	3.27
C ₄	17.79	23.32	21.67	18.04	18.19
C ₄ = & C ₄ =	1.97	2.51	2.66	1.61	2.42
C ₅	8.12	7.71	10.56	8.74	8.77
C ₅ =	0.27	1.08	0.48	0.32	1.06
C ₆ H ₁₄	4.01	4.66	5.78	9.40	9.04
C ₆ H ₁₂	0.15	0.85	0.37	0.07	0.10
C ₇ =	5.38	7.23	6.59	7.80	6.52
OIL & SOLIDS	44.80	31.07	31.77	39.83	38.88
SUBSUM C ₅ +	62.73	52.60	55.55	66.16	64.37
FRACTN CONVTD C AS C ₅ +	.6249	.5233	.5538	.6602	.6425
SIMULATED DISTILLATION ON OIL & SOLIDS					
10 WT % @ DEG F	285	289	285	282	280
16	323	324	300	310	290
50	383	357	352	386	384
84	401	399	398	399	397
90	404	402	401	401	399
RANGE(16-84%)	78	75	98	89	107
FIA ANALYSIS ON OIL, WT %					
AROMATICS	97.6	99.2	97.4	90.4	
OLEFINS	0.2	0.8	0.6	1.3	
SATURATES	0.2	0.0	2.0	8.3	

TABLE 1 RESULT OF METHANOL OPERATION

RUN NO. 9710-10
 CATALYST: ZSM-5 #9520-B9 40 CC 20 GM
 FEED: CH₃OH/N₂ @ .63/.37 MOLE RATIO

RUN & SAMPLE NO.	R-10-11	R-10-38		
CH ₃ OH WHSV	3.0	3.0		
HRS ON STREAM	36.5	42.5		
PRESSURE, PSIG	25	25		
TEMP. C	368	448		
FEED ALCOHOL CC	[222.5	[515.0	[[
HOURS FEEDING	[3.0	[7.0	[[
EFFLNT GAS LITER	[113.8	[270.4	[[
GM AQUEOUS LAYER	[95.37	[222.01	[[
GM HYDROCARBON	[18.31	[36.09	[[
APPEARANCE OF HC	[OIL+CRSTL]	[OIL ONLY]		
MATERIAL BALANCE				
ON C	.769	.717		
H	.858	.856		
O	.943	.724		
CONSISTENCY RATIO	.816	.738		
CH ₃ OH CONVERSION	91.08	91.19		
PRODT DISTRIBTN, %C-ATOM				
DIMETHYL ETHER	0.00	0.00		
HYDROCARBONS	99.81	99.61		
OTHERS(CO, CO ₂)	0.19	0.39		
HC SELECTVTY, % C-ATOM				
CH ₄	0.74	2.33		
C ₂ HC'S	5.19	5.76		
C ₃	6.38	10.30		
C ₃ =	3.04	7.74		
C ₄	17.95	18.26		
C ₄ = & C ₄ ==	5.72	4.12		
C ₅	8.41	5.59		
C ₅ =	0.71	0.96		
C ₆ H ₁₄	8.47	4.44		
C ₆ H ₁₂	0.74	0.59		
C ₇ +	7.00	7.42		
OIL & SOLIDS	35.65	32.49		
SUBSUM C ₅ +	60.98	51.49		
FRACTN CONVD C AS C ₅ +	.6086	.5129		
SIMULATED DISTILLATION ON OIL & SOLIDS				
10 WT % @ DEG F	282	285		
16	300	290		
50	385	347		
84	396	395		
90	398	399		
RANGE(916-84Z)	96	105		
FIA ANALYSIS ON OIL, WT %				
AROMATICS	.	72.8		
OLEFINS	.	9.4		
SATURATES	.	17.4		

Table 2 RESULT OF PROPYLENE (WITH H₂) OPERATION

RUN & SAMPLE NO.	9710-11-1	9710-11-2	9710-11-3	9710-11-4	9710-11-5
C ₃ H ₆ WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAMS	5.7	22.3	29.3	46.3	53.3
PRESSURE, PSIG	24	24.3	26	40.6	26.4
TEMP. C	411	408	412	411	411
FEED C ₃ H ₆ CC	[359.73	[1266.59	[524.16	[1200.15	[500.75
HOURS FEEDING	[5.75	[16.5	[7.00	[17.00	[7.00
EFFLNT GAS LITER	[194.9	[559.48	[232.57	[578.70	[254.5
GM LIQ HYDROCARBON	[55.8	[188.67	[66.43	[126.93	[25.61
WT FR. LIQ HC/FEED	.3025	.2905	.2472	.2063	.0997
MATERIAL BALANCE WT %	99.09	84.81	76.13	114.08	82.39
C ₃ H ₆ CONVERSION %	94.37	85.75	81.08	77.18	58.27
PRDT SELECTIVITY WT %					
CH ₄	0.7233	0.1362	0.1342	0.0435	0.0454
C ₂ HC'S	2.3510	1.2298	1.2889	0.4009	0.4306
C ₃ H ₈	30.1422	6.6663	6.0960	8.0471	4.6857
C ₄ H ₁₀	17.9181	9.7681	7.6749	1.6753	0.9575
C ₄ H ₈ =	2.5276	13.4157	17.3353	21.1027	19.6511
C ₅ H ₁₂	4.6290	5.1768	3.5549	1.6791	0.4909
C ₅ H ₁₀ =	0.7209	7.9965	5.1526	15.3231	12.2498
C ₆ H ₁₄	1.1932	3.5439	3.3998	4.0980	3.4182
C ₆ H ₁₂ =	0.1787	2.0548	4.2998	12.8985	13.6338
C ₇ - IN GAS	7.0046	9.8013	10.7088	11.1796	23.5097
LIQ/SATURATES	0.3913	2.8147	2.7845	0.0000	0.0628
LIQ/OLEFINS	0.3587	9.7310	21.1862	20.3255	16.1558
LIQ/AROMATICS	31.8613	27.6649	16.3840	3.2266	4.7086
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C ₁ -C ₄	53.66	31.22	32.53	31.27	25.77
C ₅ -420 F	35.41	63.90	63.52	67.25	73.31
420-700 F	10.92	4.88	3.95	1.48	0.92
C ₅ -END PT	46.34	68.78	67.47	68.73	74.23
FOR C ₅ + FRACTION					
SATURATES, WT %	13.59	17.77	15.53	8.41	5.45
OLEFINS	2.88	32.21	53.74	84.67	81.08
AROMATICS	83.53	50.02	30.73	6.92	13.47
ISO/NORMAL MOLE RATIO					
C ₄	1.375	2.036	1.932	0.098	1.278
C ₅	2.930	2.547	2.420	1.899	2.000
C ₆	4.850	2.644	1.910	1.158	0.650
C ₇ =	0.451	0.423	0.415	0.371	0.346

TABLE 2 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-11 (CONTINUED)
 CATALYST 12-105-6 #9939-01 50 CC 34.36 GM (38.18 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 330 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-11-1	9710-11-2	9710-11-3	9710-11-4	9710-11-5
C3H6 WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAMS	5.7	22.3	29.3	46.3	53.3
PRESSURE, PSIG	24	24.3	26	40.6	26.4
TEMP. C	411	408	412	411	411

PRDT SELECTIVITY

PARAFFIN/OLEFIN M RATIO

C3	4.846	0.380	0.249	0.261	0.063
C4	6.843	0.703	0.427	0.077	0.047
C5	6.242	0.629	0.671	0.107	0.039
C6	6.521	1.684?	0.772	0.310	0.245

LIQ HC COLLECTION

PHYSICAL APPEARANCE	OIL	OIL	OIL	OIL	OIL
DENSITY	0.913	0.822	0.771	0.739	0.688
N, REFRACTIVE INDEX	1.5340	1.4853	1.4573	1.4395	1.4305

FIA ANALYSIS, WT %

AROMATICS	97.70	68.80	40.60	13.70	22.50
OLEFINS	1.10	24.20	52.50	86.30	77.20
SATURATES	1.20	7.00	6.90	0.00	0.30

SIMULATED DISTILLATION

10 WT % @ DEG F.	234	189	158	156	161
16	239	219	186	169	174
50	332	297	282	260	259
84	479	399	385	359	343
90	492	434	418	392	375

RANGE(16-84%) 240 180 199 190 169

WT % @420 F	66.5	87.86	90.20	93.70	95.62
WT % @700 F	100.0	100.00	100.00	100.00	100.00

TABLE 2 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO. 9710-11
 CATALYST LE-105-6 #9939-01 50 CC 34.36 GM (38.18 GM AFTER THE RUN)
 FEED C₃H₆/H₂ @ 1/1 MOLE RATIO, 330 CC/MIN H₂ FLOW
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-11-6	9710-11-7	9710-11-8
C ₃ H ₆ WHSV	1.0	1.0	1.0
HRS ON STREAMS	60.0	65.5	71.083
PRESSURE, PSIG	26	28.1	34.6
TEMP. C	411	411	411
FEED C ₃ H ₆ CC	[478.80	[405.7	[406.35
HOURS FEEDING	[6.75	[5.5	[5.583
EFFLNT GAS LITER	[235.7	[192.9	[190.1
GM LIQ HYDROCARBON	[39.9	[36.92	[44.05
WT FR. LIQ HC/FEED	.1625	.1775	.2153
MATERIAL BALANCE WT %	80.96	91.16	88.55
C ₃ H ₆ CONVERSION %	65.00	71.05	71.70
PRDT SELECTIVITY WT %			
CH ₄	0.0490	0.0418	0.0463
C ₂ HC'S	0.6845	0.5880	0.5056
C ₃ H ₈	3.8572	4.2219	3.2256
C ₄ H ₁₀	1.8031	1.9891	1.7410
C ₄ H ₈ =	21.8982	19.8768	18.4689
C ₅ H ₁₂	0.8658	1.1184	1.0614
C ₅ H ₁₀ =	11.7968	13.0022	12.6539
C ₆ H ₁₄	2.7372	3.5169	3.4618
C ₆ H ₁₂ =	7.5585	7.5733	10.8295
C ₇ + IN GAS	17.6239	20.4379	14.3994
LIQ/SATURATES	0.1868	0.0000	0.2354
LIQ/OLEFINS	24.2782	21.5267	27.4902
LIQ/AROMATICS	6.6609	6.1071	5.8812
TOTAL	100.00	100.00	100.00
SUB-GROUPING			
C ₁ -C ₄	28.29	26.72	23.99
C ₅ -420 F	69.84	71.72	74.07
420-700 F	1.87	1.56	1.95
C ₅ -END PT	71.71	73.28	76.01
FOR C ₅ - FRACTION			
SATURATES, WT %	5.43	6.33	6.39
OLEFINS	80.02	79.18	82.56
AROMATICS	14.55	14.50	11.05
ISO/NORMAL MOLE RATIO			
C ₄	1.746	1.521	1.640
C ₅	2.291	2.052	2.120
C ₆	0.957	1.060	1.024
C ₄ =	0.368	0.363	0.351

TABLE 2 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO. 9710-11 (CONTINUED)
 CATALYST LZ-105-6 #9939-01 50 CC 34.36 GM (38.18 GM AFTER THE RUN)
 FEED C₃H₆/H₂ @ 1/1 MOLE RATIO, 330 CC/MIN H₂ FLOW
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-11-6	9710-11-7	9710-11-8
C ₃ H ₆ WHSV	1.0	1.0	1.0
HRS ON STREAMS	60.0	65.5	71.083
PRESSURE, PSIG	26	28.1	34.6
TEMP. C	411	411	411

PRDT SELECTIVITY WT %

PARAFFIN/OLEFIN M RATIO

	9710-11-6	9710-11-7	9710-11-8
C ₃	0.068	0.099	0.078
C ₄	0.079	0.097	0.091
C ₅	0.071	0.084	0.082
C ₆	0.354	0.454	0.312

LIQ HC COLLECTION

PHYSICAL APPEARANCE	OIL	OIL	OIL
DENSITY	0.724	0.742	0.718
N, REFRACTIVE INDEX	1.4438	1.4382	1.4417

FIA ANALYSIS, WT %

	9710-11-6	9710-11-7	9710-11-8
AROMATICS	21.4	22.1	17.5
OLEFINS	78.0	77.9	81.8
SATURATES	0.60	0.00	0.7

SIMULATED DISTILLATION

10 WT % @ DEG F.	9710-11-6	9710-11-7	9710-11-8
16	182	176	172
50	263	261	259
84	358	355	354
90	390	387	387

RANGE (16-84%)	9710-11-6	9710-11-7	9710-11-8
	176	179	182

WT % @ 420 F	9710-11-6	9710-11-7	9710-11-8
	94.0	94.36	94.21
WT % @ 700 F	9710-11-6	9710-11-7	9710-11-8
	100.0	100.00	100.00

Table 3 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-12
 CATALYST L2-105-6 #9939-01 50 CC 30.05 GM (35.29 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.	9710-12-1	9710-12-2	9710-12-3	9710-12-4	9710-12-5
C3H6 WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAMS	8.0	16.0	23.5	40.0	46.67
PRESSURE, PSIG	27	27	27	27	27
TEMP. C	450	450	450	450	450
FEED C3H6 CC	[509.70	[522.3	[478.2	[1087.	[427.9
HOURS FEEDING	[8.00	[8.0	[7.5	[16.5	[6.667
EFFLNT GAS LITER	[255.0	[206.1	[237.2	[543.8	[236.5
GM LIQ HYDROCARBON	[70.56	[69.14	[56.1	[58.2	[6.83
WT FR. LIQ HC/FEED	.2712	.2594	.1298	.1049	.0313
MATERIAL BALANCE WT %	86.87	75.60	91.85	75.58	76.01
C3H6 CONVERSION %	99.63	84.65	81.63	57.63	39.64
PRDT SELECTIVITY WT %					
CH4	1.3808	0.7249	0.5919	0.2477	0.2387
C2 HC'S	3.9354	2.8986	2.6976	1.1966	1.0108
C3H8	31.7184	12.3318	11.2230	5.5043	7.7904
C-H10	14.2628	11.7988	8.3879	1.2356	0.7373
C-H5=	3.2689	11.6079	15.0182	18.2750	20.2059
C5H12	3.5691	4.2221	3.3189	0.6369	0.3054
C5H10=	1.5454	4.5636	7.6056	10.6535	11.1623
C6H14	1.3018	2.5049	7.2215	4.8501	5.6256
C6H12=	0.6119	1.9458	4.4625	9.8439	18.5025
C7- IN GAS	6.9863	6.7275	8.7270	23.4225	24.0324
LIQ/SATURATES	0.4713	2.1964	1.5373	0.0000	0.0000
LIQ/OLEFINS	0.4713	2.9285	5.3806	13.3921	7.3759
LIQ/AROMATICS	30.4768	35.5491	23.8282	10.7378	3.0127
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1-C4	54.57	39.36	37.92	26.46	29.98
C5 -420 F	36.76	53.64	58.08	71.88	69.38
420-700 F	8.67	7.00	4.00	1.67	0.63
C5 -END PT	45.43	60.64	62.08	73.54	70.02
FOR C5+ FRACTION					
SATURATES, WT %	11.99	15.32	20.15	7.46	8.47
OLEFINS	6.02	16.36	30.57	63.76	77.27
AROMATICS	82.00	68.32	49.28	28.77	14.26
ISO/NORMAL MOLE RATIO					
C4	1.085	1.549	1.364	1.193	0.970
C5	2.160	2.148	2.170	1.917	1.648
C6	2.982	3.447	6.517	1.275	0.869
C7+	0.535	0.428	0.433	0.387	0.368

TABLE 3 RESULT OF PROPYLENE (WITH H₂) OPERATION

RUN NO. 9710-12 (CONTINUED)					
CATALYST	12-103-6	#9939-01	50 CC	30.05 GM	(35.19 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.	9710-12-1	9710-12-2	9710-12-3	9710-12-4	9710-12-5
C ₃ H ₆ WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAM	8.0	16.0	23.5	40.0	46.67
PRESSURE, PSIG	27	27	27	27	27
TEMP. C	450	450	450	450	450
PRDT SELECTIVITY WT %					
PARAFFIN/OLEFIN M RATIO					
C3	82.060	0.645	0.476	0.071	0.049
C4	4.212	0.981	0.539	0.065	0.035
C5	2.245	0.899	0.424	0.058	0.027
C6	2.078	1.257	1.580	0.481	0.297
LIQ HC COLLECTION					
PHYSICAL APPEARANCE	OIL	OIL	OIL	OIL	OIL
DENSITY	0.913	0.856	0.822	0.769	0.770
N, REFRACTIVE INDEX	1.5285	1.5030	1.4910	1.4540	1.4514
FIA ANALYSIS, WT %					
AROMATICS	97.0	87.4	77.5	44.5	29.0
OLEFINS	1.5	7.2	17.5	55.5	71.0
SATURATES	1.5	5.4	5.4	0.0	0.0
SIMULATED DISTILLATION					
10 WT % @ DEG F.	233	196	168	159	162
16	236	234	209	171	181
50	306	293	289	277	284
84	453	433	401	366	365
90	485	470	441	397	394
RANGE (16-84%)	217	199	192	195	184
WT % @ 420 F	72.4	82.8	87.0	93.1	93.9
WT % @ 3700 F	100.0	100.0	100.0	100.0	100.0

TABLE 3 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO. 9710-12
 CATALYST LB-105-6 #9939-01 50 CC 30.05 GM (35.29 GM AFTER THE RUN)
 FEED C₃H₆/H₂ 3 1/1 MOLE RATIO, 290 CC/MIN H₂ FLOW
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-12-6	9710-12-7			
C ₃ H ₆ WHSV	1.0	1.0	.	.	.
HRS ON STREAMS	63.33	69.33	.	.	.
PRESSURE, PSIG	27	27	.	.	.
TEMP. C	450	450	.	.	.
FEED C ₃ H ₆ CC	[978.8	[276.87	[[[
HOURS FEEDING	[16.667	[6.0	[[[
EFFLNT GAS LITER	[619.2	[230.6	[[[
GM LIQ HYDROCARBON	[1.56	[0.0	[[[
WT. FR. LIQ HC/FEED	.0031	.0000	.	.	.
MATERIAL BALANCE WT %	102.11	107.49	.	.	.
C ₃ H ₆ CONVERSION %	16.06	12.24	.	.	.
PRDT SELECTIVITY WT %			.	.	.
CH ₄	0.1539	0.2768	.	.	.
C ₂ HC'S	0.6124	0.7257	.	.	.
C ₂ H ₈	29.2246	26.1884	.	.	.
C ₂ H ₁₀	0.4127	0.2912	.	.	.
C ₂ H ₈ *	8.0065	7.4673	.	.	.
C ₃ H ₁₂	0.2418	0.2300	.	.	.
C ₃ H ₁₀ *	5.9678	5.6253	.	.	.
C ₃ H ₁₄	7.9793	9.1143	.	.	.
C ₃ H ₁₂ *	20.2008	29.1777	.	.	.
C ₇ - IN GAS	25.3182	20.9034	.	.	.
LIQ/SATURATES	0.0000	0.0000	.	.	.
LIQ/OLEFINS	1.4718	0.0000	.	.	.
LIQ/AROMATICS	0.4103	0.0000	.	.	.
TOTAL	100.00	100.00	.	.	.
SUBGROUPING			.	.	.
C ₁ -C ₄	38.41	34.95	.	.	.
C ₅ -420 F	61.32	65.05	.	.	.
420-700 F	0.27	0.00	.	.	.
C ₅ -END PT	61.59	65.05	.	.	.
FOR C ₅ + FRACTION			.	.	.
SATURATES, WT %	13.35	14.36	.	.	.
OLEFINS	77.02	78.63	.	.	.
AROMATICS	9.63	7.01	.	.	.
ISO/NORMAL MOLE RATIO			.	.	.
C ₄	0.3832	0.1786	.	.	.
C ₅	0.6029	0.6154	.	.	.
C ₆	0.7451	0.8829	.	.	.
C ₇ *	0.3262	0.3167	.	.	.

TABLE 3 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-12 (CONTINUED)
 CATALYST LE-105-6 #9939-01 50 CC 30.05 GM (35.29 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.	9710-12-6	9710-12-7
C3H6 WHSV	1.0	1.0
HRS ON STREAMS	63.33	69.33
PRESSURE, PSIG	27	27
TEMP. C	450	450

PRDT SELECTIVITY WT %

PARAFFIN/OLEFIN M RATIO

C3	0.0542	0.0354
C4	0.0498	0.0376
C5	0.0394	0.0397
C6	0.3858	0.3051

LIQ HC COLLECTION

PHYSICAL APPEARANCE OIL ---
 DENSITY 0.744 ---

N. REFRACTIVE INDEX 1.4438 ---

FIA ANALYSIS, WT %

AROMATICS 21.8 ---
 OLEFINS 78.2 ---
 SATURATES 0.0 ---

SIMULATED DISTILLATION

10 WT % @ DEG F.	246	---
15	272	---
50	330	---
80	413	---
90	442	---

RANGE(16-8-%) 141 ---

WT % @420 F 85.6 ---

WT % @700 F 100.0 ---

Table 4 RESULT OF PROPYLENE(WITH H₂) OPERATION

RUN NO.	9710-13				
CATALYST	LZ-103-5 #9939-01 43 CC 30.00 GM (34.05 GM AFTER THE RUN)				
FEED	C ₃ H ₆ /H ₂ @ 1/1 MOLE RATIO, 285 CC/MIN H ₂ FLOW				
	C ₃ H ₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)				
RUN & SAMPLE NO.	9710-13-1	9710-13-2	9710-13-3	9710-13-4	9710-13-5
C ₃ H ₆ WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAMS	6.5	23.5	30.5	49.3	55.5
PRESSURE, PSIG	149	149	149	149	149
TEMP. C	410	410	410	410	410
FEED C ₃ H ₆ CC	[393.3	[1076.0	[440.8	[1071.6	[394.46
HOURS FEEDING	[6.5	[16.833	[7.167	[16.833	[6.50
EFFLNT GAS LITER	[174.9	[456.1	[197.2	[488.89	[202.60
GM LIQ HYDROCARBON	[33.42	[129.66	[70.38	[146.32	[33.20
WT FR. LIQ HC/FEED	.1665	.2361	.3128	.2675	.1649
MATERIAL BALANCE WT %	86.78	79.47	91.58	89.54	94.07
C ₃ H ₆ CONVERSION %	97.23	90.51	86.69	72.82	55.63
PRDT SELECTIVITY WT %					
CH ₄	2.9546	1.6485	1.5167	1.6234	1.5844
C ₂ HC'S	6.7002	3.3402	2.9545	2.6541	3.4606
C ₃ H ₈	39.2707	16.2012	10.9699	6.3160	6.6522
C ₄ H ₁₀	16.6900	15.4444	10.4359	2.8838	1.9024
C ₄ H ₈ =	1.1912	7.1262	10.2218	14.5296	16.3015
C ₅ H ₁₂	4.2091	6.8590	5.2173	1.6728	1.0093
C ₅ H ₁₀ =	0.4215	3.8409	5.8190	8.8444	9.6614
C ₆ H ₁₄	1.1600	3.4388	3.2288	2.6794	3.6413
C ₆ H ₁₂ =	0.0624	1.7218	1.9208	5.2912	9.5745
C ₇ + IN GAS	7.3186	7.4208	7.8250	12.2993	14.3439
LIQ/SATURATES	0.7608	3.9590	3.4307	1.9779	0.0000
LIQ/OLEFINS	0.3804	3.4641	17.2331	29.9981	27.9168
LIQ/AROMATICS	18.8804	25.5352	19.2277	9.2302	3.9517
TOTAL	100.00	100.00	100.00	100.00	100.00
SUBGROUPING					
C ₁ -C ₄	66.81	43.76	36.10	28.01	29.90
C ₅ -420 F	26.37	49.81	59.59	69.11	68.51
420-700 F	6.83	6.43	4.31	2.88	1.59
C ₅ -END PT	33.19	56.24	63.90	71.99	70.10
FOR C ₅ + FRACTION					
SATURATES, WT %	19.31	26.94	19.64	9.61	6.63
OLEFINS	3.02	17.44	44.37	73.74	85.19
AROMATICS	77.67	55.62	35.99	16.65	8.17
ISO/NORMAL MOLE RATIO					
C ₄	1.1081	1.5723	1.6006	1.3520	1.1954
C ₅	3.0558	2.5625	2.3316	1.9811	1.7615
C ₆	6.5961	3.5364	2.6188	1.2322	1.2927
C ₇ =	0.4641	0.4116	0.4069	0.3560	0.3379

TABLE 4 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-13 (CONTINUED)
 CATALYST 12-105-6 #9939-01 43 CC 30.00 GM (34.05 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 285 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-13-1	9710-13-2	9710-13-3	9710-13-4	9710-13-5
C3H6 WHSV	1.0	1.0	1.0	1.0	1.0
HRS ON STREAMS	6.5	23.5	30.5	49.3	55.5
PRESSURE, PSIG	149	149	149	149	149
TEMP. C	410	410	410	410	410
PRDT SELECTIVITY WT %					
PARAFFIN/OLEFIN M RATIO					
C3	13.4417	1.4833	0.6843	0.1621	0.0801
C4	13.5250	2.0921	0.9855	0.1916	0.1127
C5	9.7059	1.7359	0.8716	0.1838	0.1015
C6	18.1512	1.9505	1.6417	0.4945	0.3714
LIQ HC COLLECTION					
PHYSICAL APPEARANCE	OIL	OIL	OIL	OIL	OIL
DENSITY	0.904	0.843	0.789	0.763	0.735
N, REFRACTIVE INDEX	1.5358	1.4972	1.4646	1.4485	1.4340
FIA ANALYSIS, WT %					
AROMATICS	94.3	77.4	48.2	22.4	12.4
OLEFINS	1.9	10.5	43.2	72.8	87.6
SATURATES	3.8	12.0	8.6	4.8	0.0
SIMULATED DISTILLATION					
10 WT % @ DEG F.	235	191	160	158	160
16	238	231	192	178	181
50	335	317	286	266	261
84	481	441	391	365	350
90	499	480	427	397	381
RANGE(16-84%)	243	210	199	187	169
WT % @420 F	65.9	80.5	89.2	93.0	95.0
WT % @700 F	100.0	100.0	100.0	100.0	100.0

TABLE 4 - RESULT OF PROPYLENE (WITH H₂) OPERATION

RUN NO. 9710-13
 CATALYST LZ-105-6 #9939-01 43 CC 30.00 GM (34.05 GM AFTER THE RUN)
 FEED C₃H₆/H₂ @ 1/1 MOLE RATIO, 285 CC/MIN H₂ FLOW
 C₃H₆ MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-13-6	9710-13-7	9710-13-8		
C ₃ H ₆ WHSV	1.0	1.0	1.0	:	:
HRS ON STREAMS	73.8	79.8	97.5	:	:
PRESSURE, PSIG	150	149	149		
TEMP. C	409	409	408		
FEED C ₃ H ₆ CC	[1155.9	[382.5	[1104.35	[.	[.
HOURS FEEDING	[18.25	[6.00	[17.75	[.	[.
EFFLNT GAS LITER	[615.9	[215.1	[650.8	[.	[.
GM LIQ HYDROCARBON	[32.2	[2.2	[0.0	[.	[.
WT FR. LIQ HC FEED	.0546	.0113	.0000		
MATERIAL BALANCE WT %	86.95	95.43	84.18	.	.
C ₃ H ₆ CONVERSION %	33.19	24.26	10.70	.	.
PRDT SELECTIVITY WT %					
CH ₄	2.4156	2.7954	5.9907		
C ₂ HC'S	4.6085	5.4013	11.3046		
C ₃ H ₆	7.8623	10.2299	16.2949		
C ₄ -H ₁₀	0.4386	0.6076	0.5006		
C ₄ H ₈ =	9.8880	11.2921	7.5778		
C ₅ H ₁₂	0.2744	0.5327	0.3931		
C ₅ H ₁₀ =	6.9475	9.4303	5.3602		
C ₆ H ₁₄	4.9028	6.5843	7.7578		
C ₆ H ₁₂ =	10.8054	17.2413	20.6765		
C ₇ + IN GAS	32.9593	30.9919	23.1751		
LIQ/SATURATES	0.0000	0.0000	0.0000		
LIQ/OLEFINS	17.7071	4.2228	0.7265		
LIQ/AROMATICS	1.1704	0.6704	0.2422		
TOTAL	100.00	100.00	100.00		
SUBGROUPING					
C ₁ -C ₄	25.23	30.33	41.67		
C ₅ -420 F	73.92	69.32	58.28		
420-700 F	0.85	0.35	0.034		
C ₅ -END PT	74.77	69.67	58.33		
FOR C ₅ + FRACTION					
SATURATES, WT %	6.92	10.21	13.97		
OLEFINS	88.78	82.73	75.68		
AROMATICS	4.30	7.06	10.35		
ISO/NORMAL MOLE RATIO					
C ₄	0.7019	0.6911	0.5810		
C ₅	0.8286	1.0270	0.4384		
C ₆	0.8418	0.8876	0.7298		
C ₇ =	0.2853	0.2909	0.2947		

TABLE 4 RESULT OF PROPYLENE(WITH H2) OPERATION

RUN NO. 9710-13 (CONTINUED)
 CATALYST LZ-105-6 #9939-01 43 CC 30.00 GM (34.05 GM AFTER THE RUN)
 FEED C3H6/H2 @ 1/1 MOLE RATIO, 285 CC/MIN H2 FLOW
 C3H6 MW= 42.0813 DENSITY= 0.51041 GM/CC (@ 73 F)

RUN & SAMPLE NO.	9710-13-6	9710-13-7	9710-13-8
C3H6 WHSV	1.0	1.0	1.0
HRS ON STREAMS	73.8	79.8	97.5
PRESSURE, PSIG	150	149	149
TEMP. C	409	409	408

PROD SELECTIVITY WT %
 PARAFFIN/OLEFIN M RATIO

C3	0.0377	0.0317	0.0191
C4	0.0428	0.0519	0.0638
C5	0.0384	0.0549	0.0713
C6	0.4231	0.3730	0.3664

LIQ HC COLLECTION

PHYSICAL APPEARANCE	OIL	OIL	OIL
DENSITY	0.729	0.752	-.--
N, REFRACTIVE INDEX	1.4284	1.4324	-.--
FIA ANALYSIS, WT %			
AROMATICS	6.2	13.7	25.0
OLEFINS	93.8	86.3	75.0
SATURATES	0.0	0.0	0.0
SIMULATED DISTILLATION			
10 WT % @ DEG F.	165	207	287
15	203	240	299
50	286	303	391
84	357	388	443
90	384	406	478
RANGE(16-84%)	154	148	144
WT % @420 F	95.5	92.8	94.2
WT % @700 F	100.0	100.0	97.7

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 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
C ₃ H ₆ WHSV	1.0	1.0
HRS ON STREAM	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 ₈	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 (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
C3H6 WHSV	0.27	0.27	0.27
HRS ON STREAM	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	47.2089	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	8.2155	6.5099	6.3195
C6H12=	6.3173	12.0976	13.1388
C7+ IN GAS	12.6762	15.1690	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 UCC-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
C3H6 WHSV	0.27	0.27	0.27
HRS ON STREAM5	3.5	7.0	14.5
PRESSURE, PSIG	25	25	25
TEMP. C	408	408	408

PRDT SELECTIVITY WT %

PARAFFIN/OLEFIN M RATIO

C3	0.3236	0.1342	0.0840
C4	0.4743	0.2037	0.1397
C5	0.4308	0.1606	0.1405
C6	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 ---

81 --- 566 ---

90 --- 598 ---

RANGE(16-84%) --- 225 ---

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	[185.9	[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 %	--.--	96.45
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

	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

	9710-16-1	9710-16-2
C ₃	0.0267	0.0267
C ₄	0.5769	0.1482
C ₅	0.2042	0.1283
C ₆	0.6844	0.6740

LIQ HC COLLECTION

		OIL
PHYSICAL APPEARANCE		---
DENSITY		---
N, REFRACTIVE INDEX		---
FIA ANALYSIS, WT %		
AROMATICS		6.8
OLEFINS		82.6
SATURATES		10.6
SIMULATED DISTILLATION		
10 WT % @ DEG F.	---	277
16	---	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 STREAM	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 %	24.15	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	OIL	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