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APPENDIX

Table 1A Conversion of n-Hexane of Preliminary Experiments

Hours on stream	Conversion of n-Hexane (%)						
	P=100 psig	P=100 psig	P=200 psig	P=200 psig	H2/HC mole	H2/HC mole	H2/HC mole
	T=450 C	T=400 C	T=450 C	T=400 C	ratio = 9	ratio = 6	ratio = 3
6	89.56	61.33	89.85	72.86	90.66	90.32	87.15
12	89.09	57.30	90.98	67.01	92.25	89.60	82.97
18	90.45	56.13	91.74	66.20	89.73	90.36	83.63
24	90.92	56.95	92.19	68.90	91.64	88.89	77.76

Table 2A Conversion of Methylcyclopentane of Preliminary Experiments

Hours on stream	Conversion of Methylcyclopentane (%)						
	P=100 psig	P=100 psig	P=200 psig	P=200 psig	H2/HC mole	H2/HC mole	H2/HC mole
	T=450 C	T=400 C	T=450 C	T=400 C	ratio = 9	ratio = 6	ratio = 3
6	93.86	62.33	96.19	77.14	94.39	95.66	93.23
12	93.44	58.41	97.14	69.63	94.81	94.60	90.37
18	95.56	55.45	96.83	69.31	93.54	95.45	89.42
24	96.19	56.61	97.46	72.80	95.77	93.86	84.55

Table 3A Weight Loss of Preliminary Experiments

Hours on stream	Weight Loss (%)						
	P=100 psig T=450 C	P=100 psig T=400 C	P=200 psig T=450 C	P=200 psig T=400 C	H2/HC mole ratio = 9	H2/HC mole ratio = 6	H2/HC mole ratio = 3
6	58.92	37.11	53.45	28.27	71.71	61.14	47.82
12	59.03	33.34	56.98	31.90	74.88	58.86	40.12
18	60.74	34.91	56.19	30.02	65.94	56.96	43.72
24	61.53	35.32	57.94	28.39	71.84	55.36	39.06

Table 4A Weight of Isomer Products of Preliminary Experiments

Hours on stream	Weight of Isomer Products (%)						
	P=100 psig T=450 C	P=100 psig T=400 C	P=200 psig T=450 C	P=200 psig T=400 C	H2/HC mole ratio = 9	H2/HC mole ratio = 6	H2/HC mole ratio = 3
6	15.49	20.63	20.50	36.93	10.34	14.53	19.95
12	15.39	20.80	18.54	31.25	8.83	16.21	21.72
18	14.54	18.65	17.26	32.39	13.07	16.12	18.22
24	14.16	19.12	16.18	35.94	11.04	16.55	18.92

Table 5A Weight of Benzene of Preliminary Experiments

Hours on stream	Weight of Benzene (%)						
	P=100 psig	P=100 psig	P=200 psig	P=200 psig	H2/HC mole	H2/HC mole	H2/HC mole
	T=450 C	T=400 C	T=450 C	T=400 C	ratio = 9	ratio = 6	ratio = 3
6	6.67	3.07	8.10	5.65	3.89	6.63	7.44
12	6.55	3.11	7.54	3.89	3.77	6.67	7.00
18	6.65	2.75	8.46	4.03	5.09	7.35	6.49
24	6.63	2.79	8.50	4.48	4.30	6.98	6.03

Table 6A Weight of Higher Aromatics of Preliminary Experiments

Hours on stream	Weight of Higher Aromatics (%)						
	P=100 psig	P=100 psig	P=200 psig	P=200 psig	H2/HC mole	H2/HC mole	H2/HC mole
	T=450 C	T=400 C	T=450 C	T=400 C	ratio = 9	ratio = 6	ratio = 3
6	4.25	0.57	2.39	0.54	2.69	4.00	4.18
12	4.17	0.43	2.05	0.15	2.82	3.71	4.53
18	3.96	0.36	2.56	0.12	3.16	4.20	5.12
24	4.07	0.31	2.69	0.16	2.41	3.99	4.88

Table 7A Conversion of n-Hexane of Reference Experiments

Time (hr)	Conv. of n-Hexane (%)			Average Ref.	Deviation (%)			Deviation (%)	
	Ref.1	Ref.2	Ref.3		Ref.1	Ref.2	Ref.3	Max	Min
12	87.34	85.29	85.04	85.89	1.69	-0.70	-1.00	1.69	1.00
18	86.45	83.56	84.74	84.91	1.80	-1.60	-0.21	1.80	3.54
24	84.27	82.47	79.02	81.92	2.87	0.67	-3.54	2.87	3.54
30	83.61	82.85	83.46	83.31	0.37	-0.55	0.18	0.37	0.55
36	84.50	83.04	83.61	83.71	0.93	-0.81	-0.12	0.93	0.81
42	82.69	81.34	80.46	81.50	1.46	-0.19	-1.27	1.46	1.27
48	82.27	79.70	81.95	81.30	1.18	-1.97	0.79	1.18	1.97
54	80.19	80.71	83.03	81.31	-1.38	-0.73	2.11	2.11	1.38
60	81.76	78.51	80.67	80.31	1.80	-2.25	0.44	1.80	2.25
66	80.13	75.38	78.72	78.07	2.64	-3.46	0.82	2.64	3.46
72	76.05	74.91	79.22	76.73	-0.88	-2.37	3.25	3.25	2.37
78	75.65	79.65	79.62	78.31	-3.39	1.71	1.68	1.71	3.39
84	75.74	75.75	76.13	75.87	-0.17	-0.16	0.33	0.33	0.17
90	71.80	69.30	74.80	71.97	-0.24	-3.70	3.94	3.94	3.70
96	70.97	69.17	73.84	71.33	-0.50	-3.02	3.52	3.52	3.02
102	71.27	69.97	73.91	71.72	-0.62	-2.44	3.06	3.06	2.44
108	72.41	70.65	73.39	72.15	0.36	-2.08	1.72	1.72	2.08
114	70.14	70.23	75.65	72.01	-2.59	-2.47	5.06	5.06	2.59
120	72.94	68.87	75.23	72.35	0.82	-4.81	3.98	3.98	4.81
126	68.59	65.95	71.64	68.73	-0.20	-4.03	4.24	4.24	4.03
132	66.89	66.03	71.72	68.21	-1.95	-3.19	5.14	5.14	3.19
138	67.14	68.16	68.05	67.78	-0.95	0.56	0.39	0.56	0.95
144	65.95	66.89	67.09	66.64	-1.03	0.36	0.67	0.67	1.03
Average Deviation								2.35	2.33

Table 8A Conversion of Methylcyclopentane of Reference Experiments

Time (hr)	Conv. of MCP (%)			Average Ref.	Deviation (%)			Deviation (%)	
	Ref.1	Ref.2	Ref.3		Ref.1	Ref.2	Ref.3	Max	Min
12	89.14	88.94	88.97	89.02	0.14	-0.08	-0.06	0.14	0.08
18	88.72	88.41	87.70	88.27	0.50	0.15	-0.65	0.50	0.65
24	85.94	85.84	86.07	85.95	-0.01	-0.13	0.14	0.14	0.13
30	86.31	86.36	86.16	86.28	0.04	0.09	-0.13	0.09	0.13
36	84.56	84.07	85.37	84.66	-0.13	-0.70	0.83	0.83	0.70
42	83.95	83.92	84.87	84.24	-0.35	-0.39	0.74	0.74	0.39
48	84.78	83.75	85.21	84.58	0.24	-0.98	0.74	0.74	0.96
54	85.29	85.16	86.06	85.50	-0.25	-0.41	0.65	0.65	0.41
60	83.39	83.81	83.07	83.42	-0.04	0.47	-0.42	0.47	0.42
66	82.37	81.72	82.75	82.28	0.11	-0.68	0.57	0.57	0.68
72	82.12	81.59	82.96	82.22	-0.13	-0.77	0.90	0.90	0.77
78	80.05	81.36	84.59	82.00	-2.38	-0.78	3.16	3.16	2.38
84	80.48	80.42	83.72	81.54	-1.30	-1.37	2.67	2.67	1.37
90	77.46	76.83	77.99	77.43	0.05	-0.77	0.73	0.73	0.77
96	77.09	77.14	78.39	77.54	-0.57	-0.52	1.09	1.09	0.57
102	76.68	76.23	75.27	76.06	0.81	0.23	-1.04	0.81	1.04
108	76.66	75.73	76.51	76.30	0.47	-0.74	0.27	0.47	0.74
114	76.38	76.68	77.37	76.81	-0.56	-0.17	0.73	0.73	0.56
120	76.23	71.07	77.23	74.84	1.85	-5.04	3.19	3.19	5.04
126	72.54	67.46	71.91	70.64	2.70	-4.50	1.80	2.70	4.50
132	68.71	67.78	74.82	70.44	-2.45	-3.77	6.22	6.22	3.77
138	71.64	69.63	73.12	71.46	0.25	-2.57	2.32	2.32	2.57
144	71.43	70.37	71.11	70.97	0.65	-0.84	0.20	0.65	0.84
Average Deviation								1.33	1.28

Table 9A Weight Percent of Cracking Products of Reference Experiments

Time (hr)	Wt. of C1-C5 (%)			Average Ref.	Deviation (%)			Deviation (%)	
	Ref.1	Ref.2	Ref.3		Ref.1	Ref.2	Ref.3	Max	Min
12	35.42	30.94	27.34	31.23	13.41	-0.95	-12.46	13.41	12.46
18	32.55	25.73	23.93	27.40	18.78	-6.12	-12.66	18.78	12.66
24	28.25	27.26	22.25	25.92	8.99	5.16	-14.15	8.99	14.15
30	29.02	29.56	25.19	27.92	3.92	5.87	-9.78	5.87	9.78
36	36.25	25.37	28.47	30.03	20.73	-15.53	-5.20	20.73	15.53
42	30.90	24.36	21.07	25.45	21.45	-4.26	-17.19	21.45	17.19
48	24.16	29.10	26.01	26.42	-8.57	10.14	-1.57	10.14	8.57
54	24.95	26.47	28.48	26.63	-6.34	-0.60	6.94	6.94	6.34
60	30.89	21.37	26.10	26.12	18.25	-18.18	-0.07	18.25	18.18
66	29.65	19.50	22.16	23.77	24.75	-17.98	-6.77	24.75	17.98
72	18.42	27.36	24.39	23.39	-21.24	16.98	4.26	16.98	21.24
78	16.80	24.65	24.37	21.94	-23.41	12.35	11.06	12.35	23.41
84	16.88	16.76	24.68	19.44	-13.17	-13.79	26.95	26.95	13.79
90	14.19	13.95	20.06	16.07	-11.67	-13.17	24.84	24.84	13.17
96	16.20	11.13	20.89	16.08	0.80	-30.74	29.94	29.94	30.74
102	16.23	11.00	19.83	15.69	3.44	-29.86	26.42	26.42	29.86
108	15.36	16.21	22.67	18.08	-15.04	-10.34	25.39	25.39	15.04
114	20.66	12.38	18.88	17.31	19.39	-28.47	9.08	19.39	28.47
120	17.16	14.26	17.38	16.27	5.51	-12.33	6.82	6.82	12.33
126	16.35	10.87	15.07	14.10	15.98	-22.89	6.90	15.98	22.89
132	15.68	12.09	16.93	14.90	5.22	-18.86	13.64	13.64	18.86
138	16.99	13.05	22.36	17.47	-2.73	-25.27	28.00	28.00	25.27
144	16.15	14.96	22.72	17.94	-10.00	-16.64	26.64	26.64	16.64
Average Deviation								18.38	17.59

Table 10A Weight Percent of Isomer Products of Reference Experiments

Time (hr)	Wt. of Isomer (%)			Average Ref.	Deviation (%)			Deviation (%)	
	Ref.1	Ref.2	Ref.3		Ref.1	Ref.2	Ref.3	Max	Min
12	13.12	12.43	14.19	13.24	-0.96	-6.16	7.13	7.13	6.16
18	15.19	16.11	16.14	15.81	-3.94	1.89	2.05	2.05	3.94
24	14.89	15.62	16.27	15.59	-4.50	0.17	4.34	4.34	4.50
30	14.24	14.77	16.01	15.01	-5.13	-1.56	6.70	6.70	5.13
36	14.23	14.55	16.16	14.98	-5.00	-2.86	7.86	7.86	5.00
42	13.35	14.08	14.19	13.87	-3.76	1.49	2.27	2.27	3.76
48	14.47	13.15	14.41	14.01	3.28	-6.13	2.85	3.28	6.13
54	15.51	15.61	13.83	14.98	3.51	4.19	-7.70	4.19	7.70
60	14.15	16.60	15.17	15.31	-7.54	8.47	-0.92	8.47	7.54
66	16.14	15.90	16.59	16.21	-0.42	-1.89	2.32	2.32	1.89
72	16.85	15.25	16.39	16.16	4.23	-5.66	1.43	4.23	5.66
78	17.10	14.53	16.88	16.17	5.74	-10.11	4.37	5.74	10.11
84	18.09	17.85	17.55	17.83	1.44	0.12	-1.56	1.44	1.56
90	17.91	19.68	18.00	18.53	-3.37	6.21	-2.84	6.21	3.37
96	18.46	20.55	19.14	19.38	-4.76	6.03	-1.27	6.03	4.76
102	17.89	16.70	18.33	17.64	1.41	-5.32	3.90	3.90	5.32
108	16.70	16.85	17.51	17.02	-1.88	-1.02	2.90	2.90	1.88
114	16.65	18.06	17.83	17.51	-4.94	3.11	1.83	3.11	4.94
120	18.27	17.73	18.18	18.06	1.15	-1.83	0.68	1.15	1.83
126	16.57	17.28	17.12	16.99	-2.47	1.70	0.77	1.70	2.47
132	15.99	16.86	15.84	16.23	-1.49	3.89	-2.41	3.89	2.41
138	14.55	15.82	17.13	15.83	-8.13	-0.09	8.21	8.21	8.13
144	15.70	15.84	16.26	15.93	-1.49	-0.57	2.06	2.06	1.49
Average Deviation								4.31	4.59

Table 11A Weight Percent of Benzene of Reference Experiments

Time (hr)	Wt. of Benzene (%)			Average Ref.	Deviation (%)			Deviation (%)	
	Ref.1	Ref.2	Ref.3		Ref.1	Ref.2	Ref.3	Max	Min
12	6.88	7.52	7.15	7.18	-4.26	4.71	-0.45	4.71	4.26
18	6.98	7.33	7.06	7.12	-2.03	2.91	-0.88	2.91	2.03
24	7.38	6.91	7.25	7.18	2.81	-3.76	0.95	2.81	3.76
30	6.63	6.54	7.27	6.82	-2.70	-4.01	6.70	6.70	4.01
36	6.04	6.91	7.00	6.65	-9.18	3.91	5.27	5.27	9.18
42	7.18	6.77	6.06	6.67	7.69	1.45	-9.14	7.69	9.14
48	7.04	6.04	6.94	6.67	5.46	-9.46	4.00	5.46	9.46
54	6.82	5.67	6.91	6.47	5.39	-12.28	6.89	6.89	12.28
60	5.85	5.93	6.91	6.23	-6.15	-4.82	10.96	10.96	6.15
66	5.25	5.77	6.87	5.96	-11.96	-3.26	15.22	15.22	11.96
72	6.06	5.45	5.90	5.80	4.47	-6.11	1.65	4.47	6.11
78	6.21	5.36	6.00	5.86	5.95	-8.44	2.50	5.95	8.44
84	6.16	5.54	6.30	6.00	2.70	-7.68	4.97	4.97	7.68
90	6.09	5.43	6.04	5.85	4.05	-7.19	3.13	4.05	7.19
96	6.08	5.15	6.09	5.77	5.30	-10.85	5.55	5.55	10.85
102	5.34	5.60	6.04	5.66	-5.67	-1.08	6.75	6.75	5.67
108	5.55	5.34	5.88	5.59	-0.72	-4.45	5.17	5.17	4.45
114	4.70	5.43	6.00	5.38	-12.61	1.05	11.56	11.56	12.61
120	5.20	5.25	6.09	5.51	-5.68	-4.79	10.48	10.48	5.68
126	5.19	5.47	6.01	5.56	-6.58	-1.60	8.18	8.18	6.58
132	4.80	4.87	5.70	5.12	-6.42	-4.89	11.32	11.32	6.42
138	4.48	4.97	5.24	4.90	-8.49	1.46	7.03	7.03	8.49
144	4.52	4.97	4.87	4.79	-5.53	3.88	1.65	3.88	5.53
Average Deviation								6.87	7.30

Table 12A Weight Percent of Higher Aromatics of Reference Experiments

Time (hr)	Wt. of Higher Aromatics (%)			Average Ref.	Deviation (%)			Deviation (%)	
	Ref.1	Ref.2	Ref.3		Ref.1	Ref.2	Ref.3	Max	Min
12	3.26	3.39	3.19	3.28	-0.57	3.29	-2.72	3.29	2.72
18	3.14	3.05	2.78	2.99	4.89	2.08	-6.97	4.89	6.97
24	2.95	2.83	2.47	2.75	7.31	2.94	-10.25	7.31	10.25
30	2.90	2.91	2.47	2.76	4.99	5.49	-10.48	5.49	10.48
36	2.79	2.83	2.54	2.72	2.66	4.07	-6.73	4.07	6.73
42	2.38	2.62	2.07	2.36	0.74	11.30	-12.04	11.30	12.04
48	2.26	2.65	2.72	2.54	-11.19	4.15	7.04	7.04	11.19
54	2.64	2.57	2.69	2.63	0.30	-2.38	2.08	2.08	2.38
60	2.48	2.66	2.45	2.53	-2.05	5.06	-3.01	5.06	3.01
66	2.30	2.67	2.41	2.46	-6.69	8.69	-1.99	8.69	6.69
72	2.14	1.98	1.97	2.03	5.43	-2.40	-3.04	5.43	3.04
78	2.10	1.74	2.08	1.97	6.26	-11.74	5.48	6.26	11.74
84	1.88	1.67	2.05	1.86	0.65	-10.40	9.75	9.75	10.40
90	1.64	1.55	2.00	1.73	-5.39	-10.40	15.78	15.78	10.40
96	2.16	1.81	2.06	2.01	7.63	-10.21	2.58	7.63	10.21
102	2.22	2.14	2.20	2.19	1.59	-2.16	0.57	1.59	2.16
108	2.11	1.98	1.94	2.01	4.93	-1.37	-3.56	4.93	3.56
114	1.76	2.05	1.91	1.91	-7.66	7.32	0.34	7.32	7.66
120	1.87	2.18	1.89	1.98	-5.62	9.95	-4.33	9.95	5.62
126	1.88	1.49	1.76	1.71	9.88	-13.01	3.13	9.88	13.01
132	1.85	1.65	1.87	1.79	3.36	-7.92	4.56	4.56	7.92
138	1.84	1.67	1.81	1.77	3.52	-5.68	2.16	3.52	5.68
144	1.81	1.65	1.77	1.74	3.58	-5.20	1.63	3.58	5.20
Average Deviation								6.50	7.35

Table 13A Conversion of n-Hexane of Deactivated Experiments

	Time (hr)	Avg. Ref.	CS ₂		(CH ₃) ₂ S ₂		(CH ₃) ₂ S		(C ₂ H ₅) ₂ S		C ₄ H ₄ S	
			Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %
Feed	12	85.89	86.13	0.28	88.54	3.08	90.65	5.54	89.51	4.21	87.57	1.95
	18	84.91	86.34	1.68	85.13	0.26	87.78	3.38	88.09	3.74	89.60	5.52
	24	81.92	85.34	4.17	85.34	4.17	82.43	0.63	85.23	4.04	85.80	4.73
	30	83.31	86.14	3.40	85.56	2.70	85.41	2.53	85.97	3.19	85.64	2.80
	36	83.71	86.47	3.29	85.23	1.81	85.41	2.03	85.91	2.63	85.24	1.82
	42	81.50	86.40	6.02	82.42	1.13	86.11	5.66	85.86	5.36	85.26	4.62
	48	81.30	85.02	4.57	82.45	1.42	85.30	4.91	85.88	5.62	82.15	1.05
Feed + Impurity	54	81.31	79.57	-2.13	76.69	-5.68	81.78	0.59	80.60	-0.88	70.89	-12.82
	60	80.31	75.02	-6.59	73.91	-7.97	75.69	-5.75	73.93	-7.95	70.88	-11.74
	66	78.07	70.08	-10.24	73.50	-5.86	74.65	-4.39	71.45	-8.49	68.48	-12.29
	72	76.73	71.15	-7.26	76.00	-0.95	75.08	-2.15	69.32	-9.65	67.47	-12.06
Feed	78	78.31	77.53	-0.99	76.92	-1.77	80.36	2.62	78.10	-0.27	72.81	-7.03
	84	75.87	74.79	-1.43	81.05	6.83	82.12	8.23	82.08	8.18	77.42	2.04
	90	71.97	79.63	10.65	75.72	5.22	83.66	16.25	84.47	17.37	74.30	3.24
	96	71.33	75.07	5.25	80.02	12.18	85.70	20.15	88.73	24.40	76.36	7.06
Feed + Impurity	102	71.72	66.27	-7.60	71.16	-0.78	78.19	9.02	69.33	-3.33	69.19	-3.53
	108	72.15	66.66	-7.61	67.47	-6.48	71.58	-0.78	61.45	-14.83	68.20	-5.46
	114	72.01	59.53	-17.32	66.74	-7.31	70.04	-2.74	64.11	-10.97	67.91	-5.69
	120	72.35	57.79	-20.12	67.58	-6.60	71.14	-1.67	62.33	-13.85	66.83	-7.63
Feed	126	68.73	67.52	-1.76	74.96	9.07	77.43	12.66	69.56	1.22	67.45	-1.86
	132	68.21	76.01	11.43	77.01	12.89	78.46	15.02	76.74	12.51	70.81	3.80
	138	67.78	76.33	12.61	77.37	14.15	81.95	20.91	75.28	11.06	69.76	2.92
	144	66.64	74.42	11.67	78.51	17.80	80.10	20.20	67.56	1.37	67.25	0.91

Table 14A Conversion of Methylcyclopentane of Deactivated Experiments

	Time (hr)	Avg. Ref.	CS ₂		(CH ₃) ₂ S ₂		(CH ₃) ₂ S		(C ₂ H ₅) ₂ S		C ₄ H ₄ S	
			Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %
Feed	12	89.02	89.53	0.58	90.68	1.87	91.04	2.27	89.63	0.69	90.26	1.40
	18	88.27	89.63	1.53	89.42	1.30	89.79	1.72	88.57	0.34	88.04	-0.26
	24	85.95	88.36	2.80	86.98	1.20	88.04	2.44	88.36	2.80	87.41	1.70
	30	86.28	86.59	0.36	86.18	-0.12	87.51	1.43	87.83	1.80	87.94	1.92
	36	84.66	86.77	2.49	86.24	1.87	87.72	3.62	88.36	4.36	87.72	3.62
	42	84.24	86.46	2.62	86.24	2.37	87.41	3.75	87.41	3.75	87.51	3.88
	48	84.58	86.97	2.83	86.46	2.22	87.72	3.72	87.30	3.22	86.24	1.97
Feed + Impurity	54	85.50	85.12	-0.45	80.97	-5.30	88.22	3.18	87.16	1.94	76.23	-10.85
	60	83.42	81.11	-2.78	82.52	-1.08	86.13	3.25	81.68	-2.09	75.14	-9.93
	66	82.28	79.32	-3.59	79.89	-2.91	81.25	-1.25	78.87	-4.15	74.24	-9.77
	72	82.22	73.11	-11.08	78.67	-4.32	80.81	-1.72	75.51	-8.17	72.22	-12.17
Feed	78	82.00	81.92	-0.09	82.39	0.47	82.60	0.73	80.22	-2.16	75.55	-7.87
	84	81.54	80.79	-0.92	85.76	5.18	85.29	4.60	84.49	3.61	83.17	1.99
	90	77.43	82.15	6.10	81.92	5.81	87.99	13.65	86.46	11.67	79.12	2.20
	96	77.54	77.81	0.35	85.25	9.94	88.01	13.51	90.41	16.61	81.01	4.48
Feed + Impurity	102	76.06	68.93	-9.37	76.49	0.57	80.04	5.24	75.79	-0.34	72.93	-4.12
	108	76.30	71.23	-6.65	74.26	-2.67	75.39	-1.20	65.63	-13.98	74.09	-2.90
	114	76.81	64.93	-15.47	71.16	-7.35	75.08	-2.25	68.90	-10.30	70.20	-8.61
	120	74.84	63.90	-14.62	72.17	-3.57	77.79	3.94	67.03	-10.44	70.10	-6.34
Feed	126	70.64	69.33	-1.85	76.73	8.62	79.74	12.88	77.12	9.17	74.30	5.18
	132	70.44	78.55	11.52	79.66	13.09	81.70	16.00	79.53	12.92	75.28	6.88
	138	71.46	78.53	9.89	80.34	12.42	84.76	18.61	82.28	15.13	75.32	5.40
	144	70.97	79.72	12.33	80.72	13.74	83.27	17.33	72.87	2.68	72.72	2.46

Table 15A Weight Percent of Cracking Products of Deactivated Experiments

	Time (hr)	Avg. Ref.	CS ₂		(CH ₃) ₂ S ₂		(CH ₃) ₂ S		(C ₂ H ₅) ₂ S		C ₄ H ₄ S	
			Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %
Feed	12	31.23	22.73	-27.23	28.52	-8.67	38.21	22.33	34.33	9.92	33.82	8.27
	18	27.40	31.31	14.24	25.97	-5.21	31.38	14.52	35.75	30.48	36.31	32.51
	24	25.92	29.54	13.97	26.10	0.71	27.37	5.61	34.17	31.84	32.40	24.99
	30	27.92	26.05	-6.71	29.00	3.85	26.41	-5.42	34.13	22.25	32.20	15.31
	36	30.03	26.80	-10.73	33.79	12.54	36.78	22.47	34.62	15.29	37.73	25.65
	42	25.45	30.18	18.59	32.71	28.56	32.78	28.82	35.10	37.96	31.98	25.67
	48	26.42	26.70	1.04	30.27	14.55	34.77	31.57	34.64	31.07	29.57	11.91
Feed + Impurity	54	26.63	21.33	-19.92	21.80	-18.16	39.05	46.62	29.53	10.88	22.02	-17.34
	60	26.12	12.13	-53.55	34.88	33.53	35.00	33.99	31.42	20.27	23.57	-9.77
	66	23.77	23.33	-1.88	32.13	35.15	27.90	17.38	31.26	31.52	23.06	-2.97
	72	23.39	23.14	-1.08	29.70	26.98	27.85	19.07	21.95	-6.15	20.69	-11.55
Feed	78	21.94	27.30	24.42	26.02	18.59	28.66	30.63	24.94	13.67	19.47	-11.28
	84	19.44	17.49	-10.05	27.31	40.47	26.46	36.11	29.56	52.06	34.79	78.96
	90	16.07	28.95	80.16	14.74	-8.25	31.67	97.13	31.49	95.99	26.13	62.65
	96	16.08	18.29	13.78	27.19	69.11	29.21	81.69	31.88	98.31	27.85	73.25
Feed + Impurity	102	15.69	16.69	6.36	17.79	13.39	26.19	66.94	18.23	16.19	22.95	46.31
	108	18.08	21.20	17.26	22.14	22.48	26.26	45.25	7.13	-60.58	28.84	59.53
	114	17.31	14.60	-15.63	23.26	34.41	26.66	54.06	13.79	-20.30	26.33	52.13
	120	16.27	14.40	-11.49	25.33	55.69	24.27	49.18	16.62	2.18	23.64	45.32
Feed	126	14.10	16.32	15.75	25.01	77.44	23.24	64.87	22.44	59.21	21.94	55.60
	132	14.90	18.33	23.02	27.92	87.41	25.36	70.19	22.79	52.97	30.38	103.90
	138	17.47	21.02	20.32	26.12	49.53	30.34	73.69	16.79	-3.87	30.68	75.62
	144	17.94	25.22	40.56	30.63	70.75	27.84	55.18	18.69	4.20	23.18	29.21

Table 16A Weight Percent of Isomer Products of Deactivated Experiments

	Time (hr)	Avg. Ref.	CS2		(CH3)2S2		(CH3)2S		(C2H5)2S		C4H4S	
			Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %
Feed	12	13.24	15.21	14.81	16.06	21.23	13.20	-0.32	14.58	10.07	13.95	5.33
	18	15.81	14.20	-10.18	15.89	0.47	13.80	-12.70	14.05	-11.11	13.52	-14.49
	24	15.59	16.04	2.88	16.78	7.60	15.94	2.22	14.56	-6.65	14.21	-8.87
	30	15.01	16.26	8.34	16.33	8.84	15.46	3.03	14.02	-6.57	14.76	-1.65
	36	14.98	15.69	4.75	14.69	-1.96	13.92	-7.07	13.61	-9.18	13.81	-7.82
	42	13.87	15.22	9.71	14.49	4.50	13.30	-4.08	12.50	-9.88	13.41	-3.34
	48	14.01	15.71	12.15	15.05	7.45	13.59	-2.97	14.14	0.95	14.82	5.78
Feed + Impurity	54	14.98	17.93	19.68	17.13	14.30	12.90	-13.92	14.65	-2.24	17.35	15.82
	60	15.31	19.28	25.96	10.46	-31.67	11.76	-23.21	14.60	-4.65	16.49	7.76
	66	16.21	16.18	-0.19	13.83	-14.68	14.49	-10.58	14.52	-10.41	14.63	-9.77
	72	16.16	17.21	6.48	12.00	-25.78	15.57	-3.65	16.51	2.14	16.77	3.74
Feed	78	16.17	15.35	-5.08	15.03	-7.03	15.56	-3.76	20.55	27.10	16.97	4.94
	84	17.83	18.59	4.26	15.92	-10.73	17.90	0.42	14.96	-16.08	13.28	-25.54
	90	18.53	15.25	-17.70	19.95	7.69	14.96	-19.25	14.37	-22.47	17.91	-3.34
	96	19.38	18.87	-2.66	15.66	-19.21	17.47	-9.87	11.86	-38.82	17.80	-8.15
Feed + Impurity	102	17.64	15.55	-11.86	16.71	-5.28	18.50	4.87	18.25	3.47	15.38	-12.84
	108	17.02	15.88	-6.68	13.36	-21.50	15.08	-11.42	19.97	17.34	11.17	-34.39
	114	17.51	13.09	-25.26	13.41	-23.45	14.18	-19.05	17.97	2.58	11.82	-32.50
	120	18.06	12.48	-30.90	12.28	-32.01	15.82	-12.41	15.55	-13.91	14.15	-21.66
Feed	126	16.99	15.24	-10.29	13.78	-18.87	16.90	-0.52	16.09	-5.32	16.61	-2.25
	132	16.23	16.28	0.29	13.40	-17.42	17.02	4.86	17.06	5.09	11.81	-27.23
	138	15.83	15.09	-4.71	14.65	-7.46	15.03	-5.09	20.19	27.51	11.93	-24.62
	144	15.93	14.02	-12.03	12.04	-24.41	16.18	1.53	19.10	19.88	15.49	-2.78

Table 17A Weight Percent of Benzene of Deactivated Experiments

	Time (hr)	Avg. Ref.	CS ₂		(CH ₃) ₂ S ₂		(CH ₃) ₂ S		(C ₂ H ₅) ₂ S		C ₄ H ₄ S	
			Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %
Feed	12	7.18	7.83	8.94	7.24	0.81	6.41	-10.70	7.19	0.15	6.16	-14.31
	18	7.12	7.40	3.92	7.40	3.92	6.50	-8.72	6.53	-8.27	6.53	-8.28
	24	7.18	6.91	-3.85	7.47	4.05	6.53	-9.13	6.55	-8.87	6.75	-5.98
	30	6.82	7.06	3.56	7.04	3.25	7.14	4.72	6.34	-7.02	6.70	-1.73
	36	6.65	7.05	6.08	6.63	-0.25	6.54	-1.66	6.32	-4.89	6.78	1.95
	42	6.67	6.28	-5.87	6.28	-5.82	6.29	-5.67	6.10	-8.49	5.97	-10.48
	48	6.67	6.24	-6.46	5.96	-10.64	6.27	-6.05	6.99	4.77	5.98	-10.37
Feed + Impurity	54	6.47	5.03	-22.30	4.97	-23.13	3.43	-46.99	5.33	-17.62	3.69	-42.95
	60	6.23	4.02	-35.49	3.62	-41.86	3.58	-42.60	3.60	-42.25	3.09	-50.32
	66	5.96	3.19	-46.48	3.51	-41.03	4.15	-30.41	3.00	-49.62	2.77	-53.60
	72	5.80	3.01	-48.17	3.50	-39.66	4.19	-27.77	3.47	-40.19	2.89	-50.18
Feed	78	5.86	3.55	-39.30	4.27	-27.04	4.03	-31.13	4.25	-27.49	3.73	-36.29
	84	6.00	4.82	-19.68	5.41	-9.91	5.08	-15.31	4.79	-20.25	3.79	-36.81
	90	5.85	5.70	-2.67	5.82	-0.62	4.79	-18.22	5.46	-6.77	3.55	-39.36
	96	5.77	5.58	-3.44	5.22	-9.59	6.28	8.71	4.99	-13.51	3.57	-38.10
Feed + Impurity	102	5.66	3.00	-47.08	4.08	-27.88	4.13	-27.07	4.68	-17.29	2.73	-51.79
	108	5.59	2.24	-59.89	3.25	-41.83	2.96	-46.99	4.61	-17.48	1.91	-65.86
	114	5.38	2.33	-56.74	2.45	-54.40	2.57	-52.13	3.45	-35.76	1.62	-69.92
	120	5.51	2.35	-57.38	2.52	-54.33	3.56	-35.37	2.68	-51.33	1.89	-65.66
Feed	126	5.56	3.05	-45.07	3.68	-33.77	4.47	-19.62	3.85	-30.67	2.93	-47.23
	132	5.12	3.22	-37.17	3.82	-25.47	4.23	-17.50	4.44	-13.28	2.83	-44.78
	138	4.90	4.09	-16.50	4.33	-11.66	4.45	-9.22	4.25	-13.30	2.76	-43.72
	144	4.79	4.99	4.19	3.96	-17.27	4.36	-8.84	4.01	-16.32	2.60	-45.77

Table 18A Weight Percent of Higher Aromatics of Deactivated Experiments

	Time (hr)	Avg. Ref.	CS2		(CH3)2S2		(CH3)2S		(C2H5)2S		C4H4S	
			Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %	Conv. %	Dev. %
Feed	12	3.28	3.72	13.45	3.24	-1.41	2.86	-12.88	2.74	-16.38	2.83	-13.88
	18	2.99	3.29	10.13	3.07	2.54	2.81	-6.03	2.60	-13.08	2.63	-12.14
	24	2.75	3.10	12.83	3.09	12.43	2.76	0.36	2.53	-7.81	2.61	-5.15
	30	2.76	3.05	10.38	2.83	2.59	2.93	6.15	2.54	-8.01	2.83	2.43
	36	2.72	3.01	10.60	2.69	-1.06	2.61	-4.04	2.49	-8.46	2.53	-7.11
	42	2.36	2.77	17.51	2.46	4.32	2.36	0.27	2.52	6.77	2.41	2.37
	48	2.54	2.87	12.82	2.41	-5.12	2.27	-10.66	2.51	-1.11	2.33	-8.15
Feed + Impurity	54	2.63	2.86	8.50	1.96	-25.63	1.79	-32.03	2.94	11.53	2.00	-24.06
	60	2.53	3.02	19.37	2.11	-16.76	2.03	-19.60	2.55	0.68	1.87	-26.00
	66	2.46	2.95	20.07	2.02	-17.84	2.28	-7.48	1.99	-19.19	1.85	-24.71
	72	2.03	2.79	37.45	1.73	-15.06	2.09	2.92	1.98	-2.56	1.75	-13.78
Feed	78	1.97	2.35	19.30	1.62	-17.98	1.59	-19.64	1.89	-4.29	1.87	-5.41
	84	1.86	2.58	38.59	1.77	-4.93	1.92	3.06	2.06	10.59	1.64	-12.07
	90	1.73	2.17	25.70	1.81	4.59	1.71	-1.08	2.33	34.55	1.63	-5.76
	96	2.01	2.32	15.25	1.55	-23.01	2.06	2.46	1.47	-27.02	1.66	-17.41
Feed + Impurity	102	2.19	2.37	8.24	1.89	-13.68	2.02	-7.53	2.37	8.25	1.67	-23.81
	108	2.01	1.81	-9.93	2.02	0.55	1.71	-14.68	3.10	54.50	1.55	-22.68
	114	1.91	2.10	10.10	1.74	-8.73	1.31	-31.30	2.31	21.20	1.42	-25.85
	120	1.98	1.80	-8.85	1.74	-12.10	1.73	-12.69	1.70	-14.27	1.38	-30.32
Feed	126	1.71	2.04	19.59	1.82	6.79	1.76	2.87	1.89	10.47	1.67	-2.31
	132	1.79	1.78	-0.49	1.70	-4.95	1.55	-13.59	1.85	3.55	1.44	-19.63
	138	1.77	2.08	17.38	1.87	5.45	1.70	-4.05	2.01	13.39	1.03	-42.07
	144	1.74	1.92	10.33	1.67	-4.27	1.47	-15.54	1.49	-14.47	1.34	-23.33

VITA

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