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Table 1A Conversion (%) of n-Hexane of Preliminary Experiments with Time

Time on stream (hours)	Conversion (%) of n-hexane						
	P=100,T=450	P=100,T=400	P=200,T=450	P=200,T=400	*H <sub>2</sub> :H/C = 9	*H <sub>2</sub> :H/C = 6	*H <sub>2</sub> :H/C = 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

\* Hydrogen/Hydrocarbon mole ratio

Table 2A Conversion (%) of Methylcyclopentane of Preliminary Experiments with Time

Time on stream (hours)	Conversion (%) of methylcyclopentane						
	P=100,T=450	P=100,T=400	P=200,T=450	P=200,T=400	*H <sub>2</sub> :H/C = 9	*H <sub>2</sub> :H/C = 6	*H <sub>2</sub> :H/C = 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

\* Hydrogen/Hydrocarbon mole ratio

Table 3A Weight (%) Loss of Preliminary Experiments with Time

Time on stream (hours)	Weight (%) loss						
	P=100,T=450	P=100,T=400	P=200,T=450	P=200,T=400	*H <sub>2</sub> :H/C = 9	*H <sub>2</sub> :H/C = 6	*H <sub>2</sub> :H/C = 3
6	58.92	37.11	53.45	28.27	71.71	61.14	47.82
12	59.03	33.34	56.98	31.9	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

\* Hydrogen/Hydrocarbon mole ratio

Table 4A Weight (%) of Isomer Products of Preliminary Experiments with Time

Time on stream (hours)	Weight (%) of isomer products						
	P=100,T=450	P=100,T=400	P=200,T=450	P=200,T=400	*H <sub>2</sub> :H/C = 9	*H <sub>2</sub> :H/C = 6	*H <sub>2</sub> :H/C = 3
6	15.49	20.63	20.5	36.93	10.34	14.53	19.95
12	15.39	20.8	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

\* Hydrogen/Hydrocarbon mole ratio



Table 5A Weight (%) of Benzene Product of Preliminary Experiments with Time

Time on stream (hours)	Weight (%) of benzene product						
	P=100,T=450	P=100,T=400	P=200,T=450	P=200,T=400	*H <sub>2</sub> :H/C = 9	*H <sub>2</sub> :H/C = 6	*H <sub>2</sub> :H/C = 3
6	6.67	3.07	8.1	5.65	3.89	6.63	7.44
12	6.55	3.11	7.54	3.89	3.77	6.67	7
18	6.65	2.75	8.46	4.03	5.09	7.35	6.49
24	6.63	2.79	8.5	4.48	4.3	6.98	6.03

\* Hydrogen/Hydrocarbon mole ratio

Table 6A Weight (%) of Higher Aromatic Products of Preliminary Experiments with Time

Time on stream (hours)	Weight (%) of higher aromatic products						
	P=100,T=450	P=100,T=400	P=200,T=450	P=200,T=400	*H <sub>2</sub> :H/C = 9	*H <sub>2</sub> :H/C = 6	*H <sub>2</sub> :H/C = 3
6	4.25	0.57	2.39	0.54	2.69	4	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	4.2	5.12
24	4.07	0.31	2.69	0.16	2.41	3.99	4.88

\* Hydrogen/Hydrocarbon mole ratio



Table 7A Conversion (%) of n-Hexane of Repeatability Experiments with Time and Deviation (%)

Time on stream(hr)	Conversion (%) of n-hexane						Deviation (%)	
	Ref.1	Ref.2	Ref.3	Avg.Ref.	Max.Ref.	Min.Ref.	Max.	Min.
24	88.49	87.69	87.76	87.98	88.49	87.69	0.58	0.33
30	88.99	85.80	87.38	87.39	88.99	85.80	1.83	1.82
36	88.18	85.98	87.86	87.34	88.18	85.98	0.96	1.56
42	86.81	85.72	88.11	86.88	88.11	85.72	1.42	1.34
48	86.40	84.30	87.28	85.99	87.28	84.30	1.50	1.97
54	84.65	83.75	86.52	84.97	86.52	83.75	1.82	1.44
60	83.15	82.17	84.26	83.19	84.26	82.17	1.29	1.23
66	81.26	82.16	84.26	82.56	84.26	81.26	2.06	1.57
72	80.49	82.76	83.78	82.34	83.78	80.49	1.75	2.25
78	80.70	83.14	83.60	82.48	83.60	80.70	1.36	2.16
84	80.52	81.18	83.66	81.79	83.66	80.52	2.29	1.55
90	78.74	82.51	82.33	81.19	82.51	78.74	1.63	3.02
96	77.67	79.34	81.69	79.57	81.69	77.67	2.66	2.39
102	77.81	78.52	80.86	79.06	80.86	77.81	2.28	1.58
108	78.15	79.61	80.90	79.55	80.90	78.15	1.70	1.76
114	76.88	79.45	79.95	78.76	79.95	76.88	1.51	2.39
120	77.24	78.81	80.42	78.82	80.42	77.24	2.03	2.00
126	75.55	78.03	80.38	77.98	80.38	75.55	3.08	3.12
132	75.06	78.17	79.26	77.50	79.26	75.06	2.27	3.15
138	75.76	78.50	78.91	77.72	78.91	75.76	1.53	2.52
144	74.76	77.88	79.20	77.28	79.20	74.76	2.48	3.26
Average deviation (%)							1.81	2.02

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Table 8A Conversion (%) of Methylcyclopentane of Repeatability Experiments with Time and Deviation (%)

Time on stream(hr)	Conversion (%) of methylcyclopentane						Deviation (%)	
	Ref.1	Ref.2	Ref.3	Avg. Ref.	Max.Ref.	Min.Ref.	Max.	Min.
24	92.28	92.06	92.28	92.20	92.28	92.06	0.09	0.15
30	92.49	90.69	92.59	91.92	92.59	90.69	0.73	1.34
36	92.28	90.90	92.59	91.92	92.59	90.90	0.73	1.11
42	91.11	90.26	92.38	91.25	92.38	90.26	1.24	1.08
48	89.95	89.10	91.32	90.12	91.32	89.10	1.33	1.13
54	88.68	88.25	90.90	89.28	90.90	88.25	1.81	1.15
60	88.47	87.51	90.26	88.75	90.26	87.51	1.70	1.40
66	87.41	87.41	89.52	88.11	89.52	87.41	1.60	0.79
72	87.09	87.51	88.99	87.87	88.99	87.09	1.27	0.89
78	87.83	88.25	88.89	88.32	88.89	87.83	0.65	0.55
84	86.56	86.88	88.47	87.30	88.47	86.56	1.34	0.85
90	86.03	86.77	87.62	86.81	87.62	86.03	0.93	0.90
96	84.02	84.97	87.30	85.43	87.30	84.02	2.19	1.65
102	84.23	84.44	87.62	85.43	87.62	84.23	2.56	1.40
108	84.23	85.50	87.41	85.71	87.41	84.23	1.98	1.73
114	82.65	85.29	86.67	84.87	86.67	82.65	2.12	2.62
120	81.69	82.75	86.03	83.49	86.03	81.69	3.04	2.16
126	82.01	82.86	86.14	83.67	86.14	82.01	2.95	1.98
132	82.43	84.34	85.29	84.02	85.29	82.43	1.51	1.89
138	81.59	84.34	85.82	83.92	85.82	81.59	2.26	2.78
144	81.06	83.49	85.19	83.25	85.19	81.06	2.33	2.63
Average deviation (%)							1.64	1.44

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Table 9A Weight (%) of Cracking Products of Repeatability Experiments with Time and Deviation (%)

Time on stream(hr)	Weight (%) of cracking products with time						Deviation (%)	
	Ref.1	Ref.2	Ref.3	Avg. Ref.	Max.Ref.	Min.Ref.	Max.	Min.
24	26.41	22.61	26.95	25.32	26.95	22.61	6.42	10.71
30	25.33	22.50	23.45	23.76	25.33	22.50	6.61	5.30
36	25.55	21.44	26.24	24.41	26.24	21.44	7.50	12.17
42	24.90	24.95	27.22	25.69	27.22	24.90	5.96	3.08
48	20.85	23.00	23.56	22.47	23.56	20.85	4.85	7.21
54	19.99	24.00	22.60	22.20	24.00	19.99	8.12	9.94
60	21.90	20.96	25.78	22.88	25.78	20.96	12.67	8.39
66	19.44	20.84	23.84	21.37	23.84	19.44	11.54	9.05
72	18.57	23.35	23.85	21.92	23.85	18.57	8.79	15.30
78	20.67	22.11	22.50	21.76	22.50	20.67	3.40	5.01
84	20.25	18.34	20.61	19.73	20.61	18.34	4.44	7.06
90	18.67	23.46	23.16	21.76	23.46	18.67	7.80	14.21
96	17.76	17.79	21.85	19.13	21.85	17.76	14.20	7.18
102	16.63	16.88	20.84	18.12	20.84	16.63	15.03	8.21
108	16.79	17.06	20.70	18.18	20.70	16.79	13.84	7.66
114	21.86	17.25	20.75	19.95	21.86	17.25	9.56	13.55
120	21.05	16.89	20.25	19.40	21.05	16.89	8.52	12.92
126	17.80	20.81	20.09	19.57	20.09	17.80	2.67	9.03
132	17.21	17.03	18.61	17.62	18.61	17.21	5.64	2.31
138	18.41	17.37	18.72	18.17	18.72	17.37	3.05	4.39
144	17.00	17.08	18.43	17.50	18.43	17.00	5.29	2.88
Average deviation (%)							7.90	8.36

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Table 10A Weight (%) of Isomer Products of Repeatability Experiments with Time and Deviation (%)

Time on stream(hr)	Weight (%) of isomer products with time						Deviation (%)	
	Ref.1	Ref.2	Ref.3	Avg. Ref.	Max.Ref.	Min.Ref.	Max.	Min.
24	14.09	16.34	16.08	15.50	16.34	14.09	5.42	9.10
30	14.81	17.12	16.63	16.19	17.12	14.81	5.74	8.52
36	14.99	17.35	15.98	16.11	17.35	14.99	7.70	6.95
42	15.17	15.80	15.78	15.58	15.80	15.17	1.41	2.63
48	16.51	15.89	17.04	16.48	17.04	15.89	3.40	3.58
54	17.34	14.96	17.82	16.71	17.82	14.96	6.64	10.47
60	16.74	17.58	16.38	16.90	17.58	16.38	4.02	3.08
66	16.47	17.21	16.66	16.78	17.21	16.47	2.56	1.85
72	17.07	15.51	16.88	16.49	17.07	15.51	3.52	5.94
78	15.82	16.73	17.63	16.73	17.63	15.82	5.38	5.44
84	15.17	18.36	18.21	17.25	18.36	15.17	6.43	12.06
90	16.07	18.15	17.29	17.17	18.15	16.07	5.71	6.41
96	16.54	19.02	17.29	17.62	19.02	16.54	7.95	6.13
102	16.94	19.97	18.19	18.37	19.97	16.94	8.71	7.78
108	16.49	19.51	17.43	17.81	19.51	16.49	9.55	7.41
114	16.17	18.80	17.33	17.43	18.80	16.17	7.86	7.23
120	15.45	18.10	17.18	16.91	18.10	15.45	7.04	8.63
126	16.81	17.46	17.44	17.24	17.46	16.81	1.28	2.49
132	17.61	19.73	19.51	18.95	19.73	17.61	4.12	7.07
138	17.07	18.50	18.86	18.14	18.86	17.07	3.97	5.90
144	19.15	18.00	19.07	18.74	19.15	18.00	2.19	3.95
Average deviation (%)							5.27	6.32

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Table 11A Weight (%) of Benzene Product with Time of Repeatability Experiments and Deviation (%)

Time on stream(hr)	Weight (%) of benzene product with time						Deviation (%)	
	Ref.1	Ref.2	Ref.3	Avg. Ref.	Max.Ref.	Min.Ref.	Max.	Min.
24	6.23	6.42	5.83	6.16	6.42	5.83	4.22	5.36
30	5.94	6.16	6.20	6.10	6.16	5.94	0.98	2.62
36	6.24	6.37	6.21	6.27	6.37	6.21	1.59	0.96
42	5.91	5.41	5.86	5.73	5.91	5.41	3.14	5.58
48	5.84	5.27	5.83	5.65	5.84	5.27	3.36	6.73
54	5.58	5.71	5.90	5.73	5.90	5.58	2.97	2.62
60	5.06	5.16	5.53	5.25	5.53	5.06	5.33	3.62
66	5.16	5.24	5.98	5.46	5.98	5.16	9.52	5.49
72	5.17	5.02	5.78	5.32	5.78	5.02	8.65	5.64
78	5.08	5.06	5.75	5.30	5.75	5.06	8.49	4.53
84	5.03	5.20	5.67	5.30	5.67	5.03	6.98	5.09
90	5.06	5.15	5.46	5.22	5.46	5.06	4.60	3.07
96	5.04	5.39	5.37	5.27	5.39	5.04	2.28	4.36
102	5.02	5.32	5.33	5.22	5.33	5.02	2.11	3.83
108	4.89	5.30	5.40	5.20	5.40	4.89	3.85	5.96
114	5.06	5.28	5.39	5.24	5.39	5.06	2.86	3.44
120	4.92	5.35	5.51	5.26	5.51	4.92	4.75	6.46
126	4.88	5.16	5.32	5.12	5.32	4.88	3.91	4.69
132	4.77	5.24	5.21	5.07	5.24	4.77	3.35	5.92
138	4.71	5.08	5.61	5.13	5.61	4.71	9.36	8.19
144	4.63	5.06	5.50	5.06	5.50	4.63	8.70	8.50
Average deviation (%)							4.81	4.89

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Table 12A Weight % of Higher Aromatic Products of Repeatability Experiments and Deviation (%)

Time on stream(hr)	Weight (%) of higher aromatic products with time						Deviation (%)	
	Ref.1	Ref.2	Ref.3	Avg. Ref.	Max.Ref.	Min.Ref.	Max.	Min.
24	4.77	4.76	4.26	4.60	4.77	4.26	3.70	7.39
30	4.33	4.04	4.03	4.13	4.33	4.03	4.84	2.42
36	4.45	4.15	4.12	4.24	4.45	4.12	4.95	2.83
42	4.40	3.78	3.97	4.05	4.40	3.78	8.64	6.67
48	4.35	3.82	4.02	4.07	4.35	3.82	6.88	6.14
54	4.06	3.60	3.80	3.82	4.06	3.60	6.28	5.76
60	3.66	3.47	3.57	3.56	3.66	3.47	2.81	2.53
66	3.88	3.41	3.91	3.73	3.91	3.41	4.83	8.58
72	3.81	3.62	3.68	3.70	3.81	3.62	2.97	2.16
78	3.70	3.28	3.56	3.51	3.70	3.28	5.41	6.55
84	3.63	3.43	3.87	3.64	3.87	3.43	6.32	5.77
90	3.81	3.26	3.56	3.54	3.81	3.26	7.63	7.91
96	3.40	3.30	3.30	3.33	3.40	3.30	2.10	0.90
102	3.50	2.97	3.07	3.18	3.50	2.97	10.06	6.60
108	3.51	3.01	3.18	3.23	3.51	3.01	8.67	6.81
114	2.94	2.93	3.37	3.08	3.37	2.93	9.42	4.87
120	2.79	2.99	3.28	3.02	3.28	2.79	8.61	7.62
126	2.76	2.91	3.18	2.95	3.18	2.76	7.80	6.44
132	2.90	2.82	2.87	2.86	2.90	2.82	1.40	1.40
138	2.70	2.74	2.99	2.81	2.99	2.70	6.41	3.91
144	3.26	2.92	3.06	3.08	3.26	2.92	5.84	5.19
Average deviation (%)							5.98	5.16

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Table 13A Conversion (%) of n-Hexane of Deactivated Experiments with Time and Deviation (%) from Average Reference Experiment

Time on stream(hrs)	Conversion (%) of n-hexane								Deviation (%) from average reference				
	Avg. Ref.	Max.Ref.	Min.Ref.	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole
24	87.98	88.49	87.69	89.49	89.09	88.06	90.25	88.57	1.72	1.26	0.09	2.58	0.67
30	87.39	88.99	85.80	88.40	88.66	89.17	89.78	88.75	1.16	1.45	2.04	2.73	1.56
36	87.34	88.18	85.98	86.13	89.48	88.06	89.26	88.48	-1.39	2.45	0.82	2.20	1.31
42	86.88	88.11	85.72	85.24	87.88	87.41	89.15	87.14	-1.89	1.15	0.61	2.61	0.30
48	85.99	87.28	84.30	84.14	86.85	86.69	88.56	86.23	-2.15	1.00	0.81	2.99	0.28
54	84.97	86.52	83.75	78.89	84.38	80.28	86.32	82.26	-7.16	-0.69	-5.52	1.59	-3.19
60	83.19	84.26	82.17	73.16	74.98	73.98	73.99	80.18	-12.06	-9.87	-11.07	-11.06	-3.62
66	82.56	84.26	81.26	70.70	69.01	71.94	65.69	78.81	-14.37	-16.41	-12.86	-20.43	-4.54
72	82.34	83.78	80.49	65.16	65.59	71.36	59.20	78.44	-20.86	-20.34	-13.33	-28.10	-4.74
78	82.48	83.60	80.70	66.11	64.89	74.70	64.66	80.02	-19.85	-21.33	-9.43	-21.61	-2.98
84	81.79	83.66	80.52	69.31	74.52	80.80	72.67	82.25	-15.26	-8.89	-1.21	-11.15	0.56
90	81.19	82.51	78.74	80.01	78.44	81.58	77.53	82.90	-1.45	-3.39	0.48	-4.51	2.11
96	79.57	81.69	77.67	79.89	79.90	81.03	78.98	82.86	0.40	0.41	1.83	-0.74	4.13
102	79.06	80.86	77.81	74.83	79.38	74.69	77.16	77.47	-5.35	0.40	-5.53	-2.40	-2.01
108	79.55	80.90	78.15	66.70	72.05	72.55	65.67	77.72	-16.15	-9.43	-8.80	-17.45	-2.30
114	78.76	79.95	76.88	63.51	62.31	72.93	58.30	76.63	-19.36	-20.89	-7.40	-25.98	-2.70
120	78.82	80.42	77.24	59.61	60.94	70.45	60.30	76.24	-24.37	-22.68	-10.62	-23.50	-3.27
126	77.98	80.38	75.55	63.01	63.28	74.93	64.15	80.10	-19.20	-18.85	-3.91	-17.74	2.72
132	77.50	79.26	75.06	71.43	68.57	78.88	65.65	79.82	-7.83	-11.52	1.78	-15.29	2.99
138	77.72	78.91	75.76	78.10	74.22	80.15	70.14	79.25	0.49	-4.50	3.13	-9.75	1.97
144	77.28	79.20	74.76	75.59	76.33	80.05	73.75	78.57	-2.19	-1.23	3.58	-4.57	1.67

Table 14A Conversion (%) of Methylcyclopentane of Deactivated Experiments with Time and Deviation (%) from Average Reference Experiment

Time on stream(hrs)	Conversion (%) of methylcyclopentane								Deviation (%) from average reference				
	Avg. Ref.	Max.Ref.	Min.Ref.	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole
24	92.20	92.28	92.06	93.12	93.33	92.49	94.18	93.54	1.00	1.23	0.31	2.15	1.45
30	91.92	92.59	90.69	92.80	93.12	92.80	94.07	92.28	0.96	1.31	0.96	2.34	0.39
36	91.92	92.59	90.90	92.59	93.23	93.76	93.02	93.44	0.73	1.43	2.00	1.20	1.65
42	91.25	92.38	90.26	92.59	92.17	92.17	93.65	92.12	1.47	1.01	1.01	2.63	0.95
48	90.12	91.32	89.10	92.06	91.96	91.65	93.23	90.12	2.15	2.04	1.70	3.45	0.00
54	89.28	90.90	88.25	84.87	90.79	88.69	92.70	88.76	-4.94	1.69	-0.66	3.83	-0.58
60	88.75	90.26	87.51	82.54	82.65	81.70	81.48	84.63	-7.00	-6.87	-7.94	-8.19	-4.64
66	88.11	89.52	87.41	75.13	77.46	79.38	70.58	83.99	-14.73	-12.09	-9.91	-19.90	-4.68
72	87.87	88.99	87.09	69.10	74.60	79.80	66.24	84.10	-21.36	-15.10	-9.18	-24.62	-4.29
78	88.32	88.89	87.83	73.12	72.91	82.13	70.26	85.34	-17.21	-17.45	-7.01	-20.45	-3.37
84	87.30	88.47	86.56	70.58	80.32	86.68	77.25	85.79	-19.15	-8.00	-0.71	-11.51	-1.73
90	86.81	87.62	86.03	82.96	84.13	87.31	82.22	87.38	-4.43	-3.09	0.58	-5.29	0.66
96	85.43	87.30	84.02	84.76	86.03	86.99	84.66	87.80	-0.78	0.70	1.83	-0.90	2.77
102	85.43	87.62	84.23	81.69	85.61	82.55	83.49	83.04	-4.38	0.21	-3.37	-2.27	-2.80
108	85.71	87.41	84.23	75.34	79.26	80.43	72.80	83.68	-12.10	-7.53	-6.16	-15.06	-2.37
114	84.87	86.67	82.65	67.72	70.90	80.65	65.71	82.83	-20.21	-16.46	-4.97	-22.58	-2.40
120	83.49	86.03	81.69	64.76	69.74	79.06	67.51	82.94	-22.43	-16.47	-5.31	-19.14	-0.66
126	83.67	86.14	82.01	70.48	71.32	82.02	71.01	86.64	-15.76	-14.76	-1.97	-15.13	3.55
132	84.02	85.29	82.43	77.67	75.24	85.09	71.01	85.05	-7.56	-10.45	1.27	-15.48	1.23
138	83.92	85.82	81.59	83.28	80.63	86.68	75.77	84.84	-0.76	-3.92	3.29	-9.71	1.10
144	83.25	85.19	81.06	81.80	83.17	86.78	80.11	83.68	-1.74	-0.10	4.24	-3.77	0.52



Table 15A Weight (%) of Cracking Products of Deactivated Experiments with Time and Deviation (%) from Average Reference Experiment

Time on stream(hrs)	Weight (%) of cracking products								Deviation (%) from average reference				
	Avg. Ref.	Max.Ref.	Min.Ref.	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole
24	25.32	26.95	22.61	30.12	28.23	26.17	33.47	25.83	18.96	11.49	3.36	32.19	2.01
30	23.76	25.33	22.50	24.64	25.74	31.13	30.80	28.38	3.70	8.33	31.02	29.63	19.44
36	24.41	26.24	21.44	21.99	27.68	24.67	29.87	25.50	-9.91	13.40	1.07	22.37	4.47
42	25.69	27.22	24.90	24.51	27.93	23.88	25.18	25.59	-4.59	8.72	-7.05	-1.99	-0.39
48	22.47	23.56	20.85	25.24	23.05	24.41	25.60	23.84	12.33	2.58	8.63	13.93	6.10
54	22.20	24.00	19.99	18.58	14.79	19.30	24.94	23.65	-16.31	-33.38	-13.06	12.34	6.53
60	22.88	25.78	20.96	9.40	14.44	15.36	13.42	21.61	-58.92	-36.89	-32.87	-41.35	-5.55
66	21.37	23.84	19.44	8.53	8.99	16.23	12.25	19.19	-60.08	-57.93	-24.05	-42.68	-10.20
72	21.92	23.85	18.57	9.91	7.29	12.82	10.43	17.26	-54.79	-66.74	-41.51	-52.42	-21.26
78	21.76	22.50	20.67	8.52	7.46	14.84	15.46	20.06	-60.85	-65.72	-31.80	-28.95	-7.81
84	19.73	20.61	18.34	14.15	18.58	23.29	19.07	23.17	-28.28	-5.83	18.04	-3.35	17.44
90	21.76	23.46	18.67	22.39	17.69	24.51	22.90	24.32	2.90	-18.70	12.64	5.24	11.76
96	19.13	21.85	17.76	19.17	14.74	22.50	19.48	23.37	0.21	-22.95	17.62	1.83	22.16
102	18.12	20.84	16.63	11.64	15.23	15.55	19.82	15.72	-35.76	-15.95	-14.18	9.38	-13.25
108	18.18	20.70	16.79	6.28	13.50	13.64	12.81	12.50	-65.46	-25.74	-24.97	-29.54	-31.24
114	19.95	21.86	17.25	9.69	4.90	14.69	8.28	11.46	-51.43	-75.44	-26.37	-58.50	-42.56
120	19.40	21.05	16.89	5.28	2.97	9.75	9.48	9.49	-72.78	-84.69	-49.74	-51.13	-51.08
126	19.57	20.09	17.80	6.31	4.81	17.36	9.73	15.41	-67.76	-75.42	-11.29	-50.28	-21.26
132	17.62	18.61	17.21	11.87	8.58	19.70	11.64	14.76	-32.63	-51.31	11.80	-33.94	-16.23
138	18.17	18.72	17.37	20.08	13.44	19.50	14.01	13.32	10.51	-26.03	7.32	-22.89	-26.69
144	17.50	18.43	17.00	13.65	13.05	18.61	14.91	14.89	-22.00	-25.43	6.34	-14.80	-14.91

Table 16A Weight (%) of Isomer Products of Deactivated Experiments with Time and Deviation (%) from Average Reference Experiment

Time on stream(hrs)	Weight (%) of isomer products								Deviation (%) from average reference				
	Avg. Ref.	Max.Ref.	Min.Ref.	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrrole	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrrole
24	15.50	16.34	14.09	14.07	15.00	15.92	12.78	16.79	-9.23	-3.23	2.71	-17.55	8.32
30	16.19	17.12	14.81	16.21	15.84	13.36	13.99	15.67	0.12	-2.16	-17.48	-13.59	-3.21
36	16.11	17.35	14.99	16.14	13.20	16.01	13.62	16.49	0.19	-18.06	-0.62	-15.46	2.36
42	15.58	15.80	15.17	14.51	14.96	16.70	16.41	16.86	-6.87	-3.98	7.19	5.33	8.22
48	16.48	17.04	15.89	14.24	17.68	16.39	16.18	17.07	-13.59	7.28	-0.55	-1.82	3.58
54	16.71	17.82	14.96	17.26	20.70	18.99	16.35	17.25	3.29	23.88	13.64	-2.15	3.23
60	16.90	17.58	16.38	24.96	20.04	20.03	19.51	16.80	47.69	18.58	18.52	15.44	-0.59
66	16.78	17.21	16.47	21.71	21.27	18.94	17.18	18.37	29.38	26.76	12.87	2.38	9.48
72	16.49	17.07	15.51	17.87	20.85	21.43	14.25	19.81	8.37	26.44	29.96	-13.58	20.13
78	16.73	17.63	15.82	19.40	20.33	20.48	14.12	17.60	15.96	21.52	22.41	-15.60	5.20
84	17.25	18.36	15.17	16.01	17.98	16.36	16.07	15.03	-7.19	4.23	-5.16	-6.84	-12.87
90	17.17	18.15	16.07	15.21	19.97	16.08	16.10	14.73	-11.42	16.31	-6.35	-6.23	-14.21
96	17.62	19.02	16.54	16.48	21.08	16.95	18.97	16.07	-6.47	19.64	-3.80	7.66	-8.80
102	18.37	19.97	16.94	20.18	19.66	20.54	17.90	20.17	9.85	7.02	11.81	-2.56	9.80
108	17.81	19.51	16.49	21.19	18.61	20.68	16.32	21.34	18.98	4.49	16.11	-8.37	19.82
114	17.43	18.80	16.17	16.87	19.81	20.02	15.04	21.97	-3.21	13.65	14.86	-13.71	26.05
120	16.91	18.10	15.45	18.03	20.65	22.68	15.73	23.49	6.62	22.12	34.12	-6.98	38.91
126	17.24	17.46	16.81	19.28	20.60	18.93	18.06	20.25	11.83	19.49	9.80	4.76	17.46
132	18.95	19.73	17.61	18.98	20.50	17.97	15.99	20.07	0.16	8.18	-5.17	-15.62	5.91
138	18.14	18.86	17.07	16.45	20.40	18.27	17.41	21.08	-9.32	12.46	0.72	-4.02	16.21
144	18.74	19.15	18.00	19.23	21.08	18.47	18.15	19.50	2.61	12.49	-1.44	-3.15	4.06

Table 17A Weight (%) of Benzene Product of Deactivated Experiments with Time and Deviation (%) from Average Reference Experiment

Time on stream(hrs)	Weight (%) of benzene product								Deviation (%) from average reference				
	Avg. Ref.	Max.Ref.	Min.Ref.	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrrole	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrrole
24	6.16	6.42	5.83	5.03	6.04	6.21	5.34	6.45	-18.34	-1.95	0.81	-13.31	4.71
30	6.10	6.20	5.94	6.01	6.49	5.35	5.61	5.63	-1.48	6.39	-12.30	-8.03	-7.70
36	6.27	6.37	6.21	6.72	5.30	6.61	5.76	6.35	7.18	-15.47	5.42	-8.13	1.28
42	5.73	5.91	5.41	5.72	5.62	6.39	6.58	6.03	-0.17	-1.92	11.52	14.83	5.24
48	5.65	5.84	5.27	5.13	6.28	6.07	6.22	6.48	-9.20	11.15	7.43	10.09	14.69
54	5.73	5.90	5.58	5.41	7.73	6.36	5.86	5.96	-5.58	34.90	10.99	2.27	4.01
60	5.25	5.53	5.06	6.77	5.31	5.74	5.56	5.40	28.95	1.14	9.33	5.90	2.86
66	5.46	5.98	5.16	5.89	5.20	5.06	3.42	5.47	7.88	-4.76	-7.33	-37.36	0.18
72	5.32	5.78	5.02	4.53	4.84	5.49	3.19	5.66	-14.85	-9.02	3.20	-40.04	6.39
78	5.30	5.75	5.06	4.67	4.55	5.88	3.28	5.61	-11.89	-14.15	10.94	-38.11	5.85
84	5.30	5.67	5.03	4.28	4.29	5.51	4.15	5.35	-19.25	-19.06	3.96	-21.70	0.94
90	5.22	5.46	5.06	4.81	5.11	5.41	4.17	5.24	-7.85	-2.11	3.64	-20.11	0.38
96	5.27	5.39	5.04	5.34	6.22	5.51	5.01	5.30	1.33	18.03	4.55	-4.93	0.57
102	5.22	5.33	5.02	5.80	6.50	5.29	4.60	5.36	11.11	24.52	1.34	-11.88	2.68
108	5.20	5.40	4.89	5.25	5.27	5.71	4.00	5.73	0.96	1.35	9.81	-23.08	10.19
114	5.24	5.39	5.06	4.26	4.86	5.73	3.49	5.52	-18.70	-7.25	9.35	-33.40	5.34
120	5.26	5.51	4.92	4.20	4.92	5.92	3.59	5.71	-20.15	-6.46	12.55	-31.75	8.56
126	5.12	5.32	4.88	4.37	4.88	5.36	4.12	5.29	-14.65	-4.69	4.69	-19.53	3.32
132	5.07	5.24	4.77	4.88	5.14	5.55	3.98	5.28	-3.75	1.38	9.47	-21.50	4.14
138	5.13	5.61	4.71	4.49	4.97	5.62	4.07	5.15	-12.48	-3.12	9.55	-20.66	0.39
144	5.06	5.50	4.63	4.97	5.40	5.72	4.64	4.89	-1.78	6.72	13.04	-8.30	-3.35

Table 18A Weight (%) of Higher Aromatic Products of Deactivated Experiments with Time and Deviation (%) from Average Reference Experiment

Time on stream(hrs)	Weight (%) of higher aromatic products					Deviation (%) from average reference							
	Avg. Ref.	Max.Ref.	Min.Ref.	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole	Pyridine	Quinoline	2,6-DMP	1234-THQ	Pyrrole
24	4.60	4.77	4.26	3.18	3.93	3.93	3.60	3.99	-30.87	-14.57	-14.57	-21.74	-13.26
30	4.13	4.33	4.03	3.67	4.17	3.82	3.58	3.36	-11.14	0.97	-7.51	-13.32	-18.64
36	4.24	4.45	4.12	4.63	3.70	4.31	4.14	3.99	9.20	-12.74	1.65	-2.36	-5.90
42	4.05	4.40	3.78	4.44	3.68	4.26	4.11	3.58	9.63	-9.14	5.19	1.48	-11.60
48	4.06	4.35	3.82	3.89	3.81	3.84	3.96	3.81	-4.19	-6.16	-5.42	-2.46	-6.16
54	3.82	4.06	3.60	2.90	3.96	2.85	3.42	3.04	-24.08	3.66	-25.39	-10.47	-20.42
60	3.57	3.66	3.47	1.72	1.59	1.47	1.88	2.32	-51.82	-55.46	-58.82	-47.34	-35.01
66	3.73	3.91	3.41	1.27	0.86	1.01	0.45	2.01	-65.95	-76.94	-72.92	-87.94	-46.11
72	3.70	3.81	3.62	0.75	0.59	0.95	0.21	1.84	-79.73	-84.05	-74.32	-94.32	-50.27
78	3.51	3.70	3.28	0.92	0.57	1.77	0.30	2.46	-73.79	-83.76	-49.57	-91.45	-29.91
84	3.64	3.87	3.43	1.61	0.95	2.93	0.96	3.41	-55.77	-73.90	-19.51	-73.63	-6.32
90	3.54	3.81	3.26	2.82	1.65	3.16	1.35	3.19	-20.34	-53.39	-10.73	-61.86	-9.89
96	3.33	3.40	3.30	3.42	2.69	3.13	1.95	3.00	2.70	-19.22	-6.01	-41.44	-9.91
102	3.18	3.50	2.97	2.53	2.90	1.84	1.55	2.02	-20.44	-8.81	-42.14	-51.26	-36.48
108	3.23	3.51	3.01	1.15	1.41	1.34	0.63	2.36	-64.40	-56.35	-58.51	-80.50	-26.93
114	3.08	3.37	2.93	0.75	0.62	1.29	0.30	2.16	-75.65	-79.87	-58.12	-90.26	-29.87
120	3.02	3.28	2.79	0.50	0.51	1.08	0.23	2.04	-83.44	-83.11	-64.24	-92.38	-32.45
126	2.95	3.18	2.76	0.75	0.67	1.68	0.41	2.66	-74.58	-77.29	-43.05	-86.10	-9.83
132	2.86	2.90	2.82	2.02	1.25	2.80	1.30	3.40	-29.37	-56.29	-2.10	-54.55	18.88
138	2.81	2.99	2.70	2.49	1.63	3.17	1.44	3.22	-11.39	-41.99	12.81	-48.75	14.59
144	3.08	3.26	2.92	2.67	2.24	3.40	2.28	3.39	-13.31	-27.27	10.39	-25.97	10.06



**VITA**

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