

Certificate of Composition
 Part #: SD-053-070
 Reformate Feed

ASTM D6730 with Helium Carrier

Summary by Group

<u>Group</u>	<u>%Wgt</u>	<u>%Vol</u>	<u>%Mol</u>	<u>Avg MW</u>	<u>Avg SG</u>
Paraffin	19.362	20.808	19.096	20.792	0.145
I-Paraffins	26.532	28.115	24.903	28.492	0.198
Aromatics	13.786	11.879	14.348	14.805	0.103
<i>Mono-Aromatics</i>	13.779	11.873	14.341	14.796	0.103
<i>Naphthalenes</i>	0.000	0.000	0.000	0.000	0.000
<i>Indanes</i>	0.000	0.000	0.000	0.000	0.000
<i>Indenes</i>	0.008	0.006	0.007	0.008	0.000
Naphthenes	38.999	37.806	40.471	41.880	0.292
<i>Mono-Naphthenes</i>	38.999	37.806	40.471	41.880	0.292
<i>Di/Bicyclo-Naphthenes</i>	0.000	0.000	0.000	0.000	0.000
Olefins	0.616	0.663	0.564	0.662	0.005
<i>n-Olefins</i>	0.160	0.176	0.137	0.172	0.001
<i>Iso-Olefins</i>	0.400	0.431	0.380	0.430	0.003
<i>Naphtheno-Olefins</i>	0.055	0.056	0.048	0.059	0.000
<i>Di-Olefins</i>	0.000	0.000	0.000	0.000	0.000
Oxygenates	0.000	0.000	0.000	0.000	0.000
Unidentified	0.705	0.728	0.617	0.757	0.005
Plus	0.000	0.000	0.000	0.000	0.000
	100.000	100.000	100.000	107.388	0.748

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Component List

<u>Pk#</u>	<u>Time</u>	<u>C#</u>	<u>Component</u>	<u>%Wgt</u>	<u>%Vol</u>	<u>%Mol</u>
1	10.202	4	n-Butane	0.003	0.004	0.005
2	13.965	5	i-Pentane	0.072	0.086	0.107
3	15.748	5	n-Pentane	0.155	0.185	0.231
4	18.303	6	2,2-Dimethylbutane	0.005	0.006	0.007
5	20.463	5	Cyclopentane	0.063	0.063	0.097
6	20.653	6	2,3-Dimethylbutane	0.067	0.076	0.083
7	21.052	6	2-Methylpentane	0.520	0.596	0.648
8	21.052	6	4-Methyl-c-pentene-2	0.127	0.141	0.162
9	22.243	6	3-Methylpentane	0.655	0.737	0.816
10	23.815	6	n-Hexane	2.148	2.435	2.676
11	26.105	7	2,2-Dimethylpentane	0.050	0.055	0.053
12	26.322	6	Methylcyclopentane	2.230	2.227	2.845
13	26.750	7	2,4-Dimethylpentane	0.140	0.155	0.150
14	27.252	7	2,2,3-Trimethylbutane	0.005	0.006	0.006
15	28.967	6	Benzene	0.612	0.520	0.841
16	29.463	7	3,3-Dimethylpentane	0.042	0.045	0.045
17	29.930	6	Cyclohexane	2.747	2.638	3.505
18	31.038	7	2-Methylhexane	1.568	1.727	1.680
19	31.235	7	2,3-Dimethylpentane	0.711	0.764	0.761
20	31.597	7	1,1-Dimethylcyclopentane	0.573	0.567	0.626
21	32.150	7	3-Methylhexane	2.356	2.564	2.525
22	33.008	7	1t,3-Dimethylcyclopentane	1.578	1.576	1.726
23	33.392	7	1c,3-Dimethylcyclopentane	1.501	1.507	1.642
24	33.538	7	3-Ethylpentane	0.250	0.267	0.268
25	33.778	7	1t,2-Dimethylcyclopentane	2.631	2.618	2.878
26	35.630	7	n-Heptane	6.013	6.575	6.444
27	38.728	7	1c,2-Dimethylcyclopentane	0.082	0.084	0.090
28	38.952	7	Methylcyclohexane	8.985	8.730	9.827
29	39.417	8	2,2-Dimethylhexane	1.086	1.167	1.021
30	41.020	7	Ethylcyclopentane	1.044	1.018	1.141
31	41.517	8	2,4-Dimethylhexane	0.394	0.420	0.370
32	42.672	8	1c,2t,4-Trimethylcyclopentane	1.268	1.242	1.214
33	42.898	8	3,3-Dimethylhexane	0.103	0.108	0.097
34	44.183	8	Cyclopentane, 1,2,3-trimethyl-, (1à,2à	1.467	1.437	1.404
35	44.748	8	2,3,4-Trimethylpentane	0.019	0.019	0.017
36	45.878	7	Toluene	3.851	3.320	4.488
37	47.217	8	2,3-Dimethylhexane	0.350	0.367	0.329
38	47.458	8	2-Methyl-3-ethylpentane	0.531	0.557	0.499
39	48.692	8	2-Methylheptane	2.945	3.155	2.769
40	49.053	8	4-Methylheptane	0.767	0.814	0.721
41	49.487	8	3-Methyl-3-ethylpentane	0.277	0.291	0.260
42	50.205	8	1c,3-Dimethylcyclohexane	0.165	0.162	0.158
43	50.605	8	3-Methylheptane	1.549	1.641	1.456
44	51.062	8	3-Ethylhexane	3.505	3.672	3.295

Recovery = 100.000

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Hydrocarbon Expert 5.16

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Component List

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45	51.550	8	1t,4-Dimethylcyclohexane	1.071	1.050	1.025
46	53.037	8	C8 MonoNaph - 1	0.351	0.340	0.336
47	54.020	8	3c-Ethylmethylcyclopentane	0.402	0.392	0.384
48	54.633	8	3t-Ethylmethylcyclopentane	0.348	0.340	0.333
49	55.022	8	2t-Ethylmethylcyclopentane	0.845	0.822	0.809
50	55.625	8	1,1-Methylethylcyclopentane	0.070	0.067	0.067
51	56.472	8	1t,2-Dimethylcyclohexane	1.493	1.439	1.429
52	58.420	8	n-Octane	5.944	6.326	5.588
53	58.737	8	1c,4-Dimethylcyclohexane	0.730	0.697	0.698
54	61.020	?	Unidentified	0.133	0.128	0.127
55	63.067	?	Unidentified	0.053	0.055	0.052
56	63.913	?	Unidentified	0.013	0.013	0.011
57	64.582	8	Cyclopentane, 1-ethyl-2-methyl	0.088	0.086	0.084
58	66.765	9	2,4-Dimethylheptane	0.504	0.527	0.422
59	67.063	?	Unidentified	0.091	0.095	0.076
60	68.833	8	Ethylcyclohexane	2.807	2.677	2.686
61	69.410	9	2,2,3-Trimethylhexane	1.088	1.137	0.911
62	70.060	?	Unidentified	0.042	0.044	0.035
63	70.833	9	C9 - MonoNaph - 1a	1.458	1.411	1.240
64	71.878	9	2,5-Dimethylheptane	0.570	0.596	0.477
65	72.725	9	1,1,3-Trimethylcyclohexane	0.210	0.200	0.179
66	73.160	9	C9 - MonoNaph - 3a	0.264	0.256	0.225
67	73.717	?	Unidentified	0.110	0.121	0.094
68	75.073	?	Unidentified	0.097	0.106	0.083
69	75.513	8	Ethylbenzene	1.919	1.655	1.941
70	76.085	9	1c,2t,4t-Trimethylcyclohexane	0.739	0.708	0.628
71	76.737	8	3-Heptene, 4-ethyl-XXX	0.030	0.029	0.026
72	78.283	8	m-Xylene	2.050	1.773	2.073
73	78.617	8	p-Xylene	1.006	0.873	1.018
74	78.792	9	2,3-Dimethylheptane	0.138	0.142	0.115
75	79.303	9	2,4-Dimethylheptene-1	0.044	0.049	0.038
76	79.677	9	3,5-Dimethylheptane	0.281	0.291	0.236
77	80.242	9	4-Ethylheptane	0.111	0.115	0.093
78	81.170	9	4-Methyloctane	0.631	0.655	0.528
79	81.475	9	2-Methyloctane	0.765	0.801	0.640
80	82.125	9	C9 - Olefin - 1	0.115	0.126	0.098
81	82.887	9	Heptane, 3-ethyl-	0.431	0.443	0.361
82	83.332	9	3,4-Dimethylheptane	1.195	1.221	1.000
83	84.100	?	Unidentified	0.031	0.026	0.031
84	84.652	8	o-Xylene	1.066	0.906	1.078
85	86.190	9	Cyclopentane, 1-methyl-2-propyl	0.417	0.354	0.354
86	86.422	9	trans-1,3-Diethylcyclopentane	0.830	0.705	0.706
87	86.975	9	Cyclohexane, 1-ethyl-4-methyl-	0.500	0.484	0.425
88	87.715	9	Nonene-1	0.046	0.050	0.039

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89	88.103	9	C9-MonoNaph-1b	0.134	0.138	0.114
90	89.387	9	t-7-Methyloctene-3	0.028	0.030	0.024
91	90.020	?	Unidentified	0.051	0.052	0.044
92	90.568	9	n-Nonane	3.899	4.062	3.264
93	91.063	9	1,1-Methylethylcyclohexane	0.533	0.495	0.454
94	91.590	10	C10 - IsoOlefin - 2	0.058	0.062	0.044
95	91.753	9	C9 - NaphOlefin -5	0.055	0.056	0.048
96	92.918	9	i-Propylbenzene	0.190	0.165	0.170
97	93.443	9	C9_Mono-Aromatics(1)	0.532	0.461	0.475
98	93.938	9	i-Propylcyclohexane	0.216	0.201	0.184
99	94.378	10	2,3,6-trimethylheptane	0.092	0.069	0.070
100	94.887	10	2,2-Dimethyloctane	0.154	0.159	0.116
101	95.845	10	2,4-Dimethyloctane	0.074	0.076	0.056
102	96.075	10	C10 - IsoParaffin - 1c	0.023	0.023	0.017
103	96.318	9	Propylcyclohexane	0.789	0.736	0.671
104	97.245	10	C10 - IsoParaffin - 3	0.210	0.215	0.159
105	97.513	10	C10 - IsoParaffin - 4	0.107	0.109	0.081
106	97.967	9	C9 - MonoNaph - 8	0.038	0.036	0.032
107	98.237	10	2,7-dimethyloctane	0.674	0.690	0.509
108	98.663	10	Heptane, 2,4,6-trimethyl-	0.023	0.023	0.017
109	98.828	?	Unidentified	0.024	0.024	0.018
110	99.235	9	n-Propylbenzene	0.315	0.273	0.281
111	99.402	10	3,6-Dimethyloctane	0.086	0.087	0.065
112	99.660	10	C10 Isoparaffin - 6	0.241	0.245	0.182
113	100.168	10	3-ethyl-2-methyl-2-heptene	0.059	0.063	0.045
114	100.785	9	1-Methyl-3-ethylbenzene	0.516	0.447	0.461
115	101.165	9	1-Methyl-4-ethylbenzene	0.191	0.166	0.171
116	101.710	9	C9_Mono-Aromatics(2)	0.183	0.159	0.164
117	102.270	9	1,3,5-Trimethylbenzene	0.324	0.280	0.289
118	102.457	10	C10 MonoNaph - 1	0.133	0.124	0.102
119	102.942	10	2,3-Dimethyloctane	0.034	0.034	0.026
120	103.295	10	C10 - Iso-olefin - 6	0.054	0.058	0.041
121	103.610	10	4-Methylnonane	0.284	0.289	0.214
122	103.818	9	1-Methyl-2-ethylbenzene	0.008	0.007	0.007
123	104.080	10	2-Methylnonane	0.357	0.367	0.269
124	105.050	10	C10-MonoNaph-2a	0.074	0.070	0.057
125	105.257	10	3-Methylnonane	0.232	0.236	0.175
126	105.598	?	Unidentified	0.060	0.064	0.046
127	106.793	9	1,2,4-Trimethylbenzene	0.508	0.434	0.454
128	106.960	10	C10 MonoNaph - 3a	0.122	0.115	0.094
129	107.417	10	t-Butylbenzene	0.127	0.110	0.114
130	108.983	10	3-Ethyl-3-methylheptane	0.022	0.022	0.015
131	109.260	10	i-Butylbenzene	0.031	0.027	0.025
132	110.173	10	n-Decane	0.921	0.943	0.695

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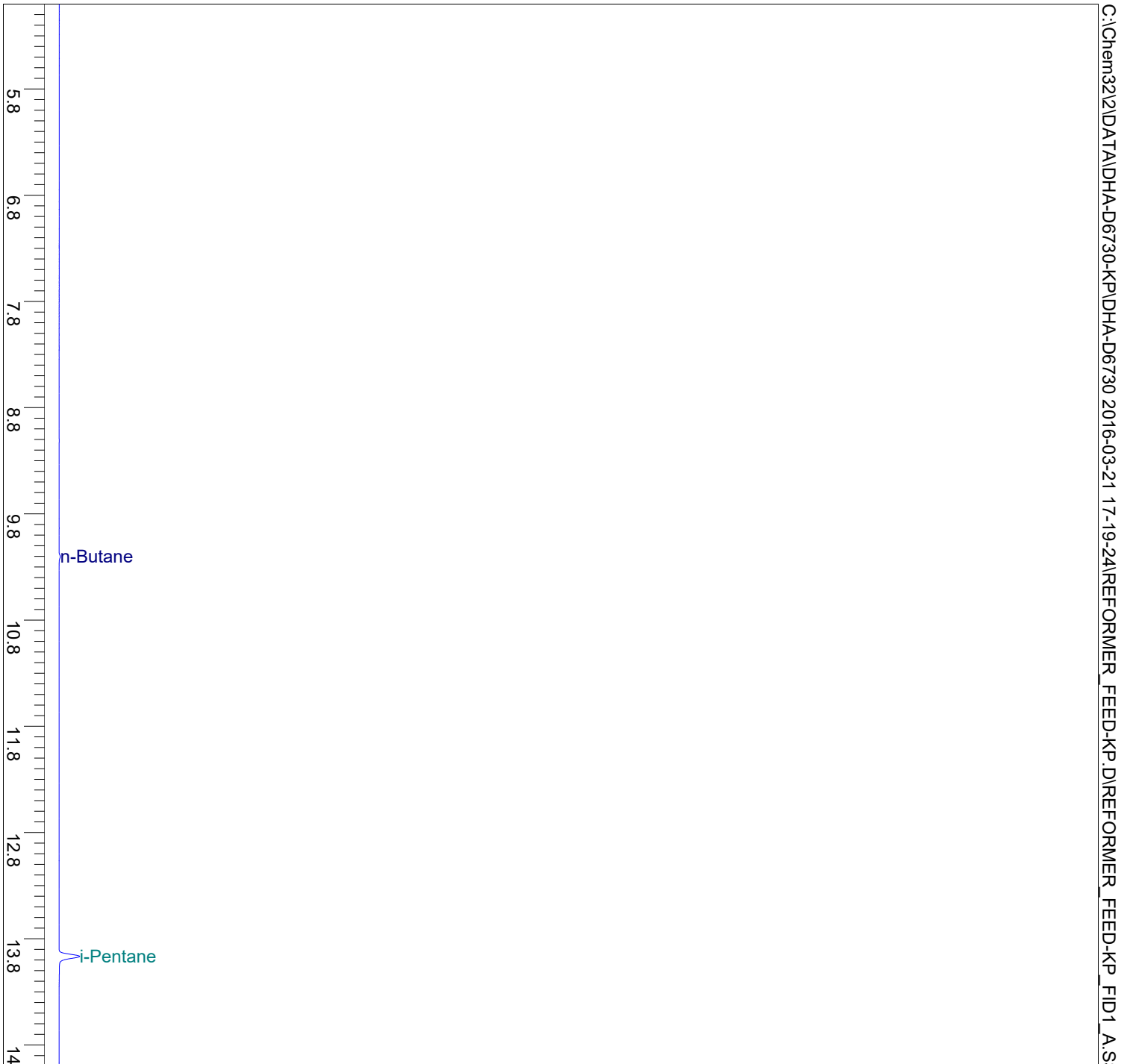
Component List

<u>Pk#</u>	<u>Time</u>	<u>C#</u>	<u>Component</u>	<u>%Wgt</u>	<u>%Vol</u>	<u>%Mol</u>
133	111.458	9	1,2,3-Trimethylbenzene	0.119	0.100	0.107
134	111.757	10	1-Methyl-3-i-propylbenzene	0.048	0.042	0.038
135	113.773	10	1-H-Indene	0.008	0.006	0.007
136	114.053	11	C11 Isoparaffin - 4	0.148	0.149	0.102
137	114.933	11	C11 IsoParaffin - 5	0.058	0.059	0.040
138	116.465	10	1-Methyl-3-n-propylbenzene	0.119	0.103	0.095
139	117.028	11	Nonane, 3,7-dimethyl-	0.036	0.037	0.025
140	118.200	10	1,3-Dimethyl-5-ethylbenzene	0.063	0.053	0.050
141	124.883	11	n-Undecane	0.278	0.280	0.191

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Sample Chromatogram



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