

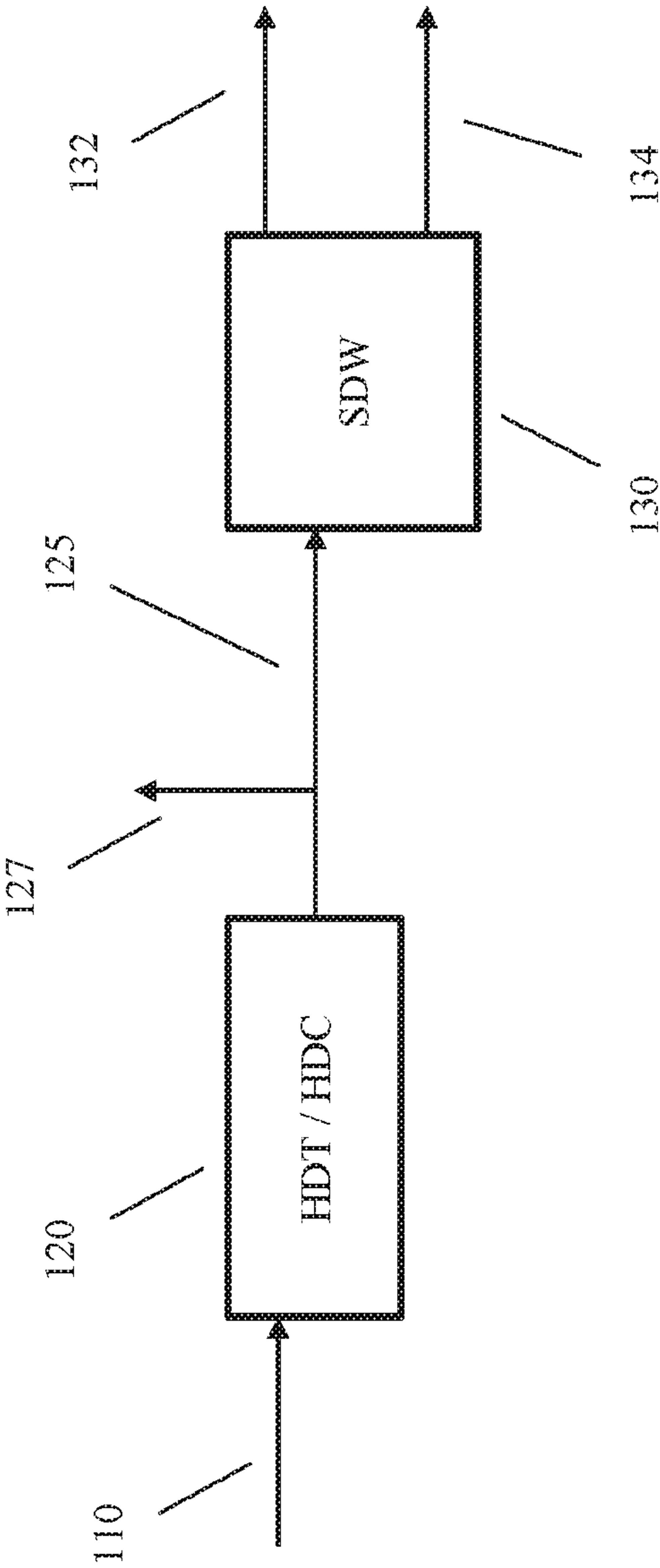


FIG. 1

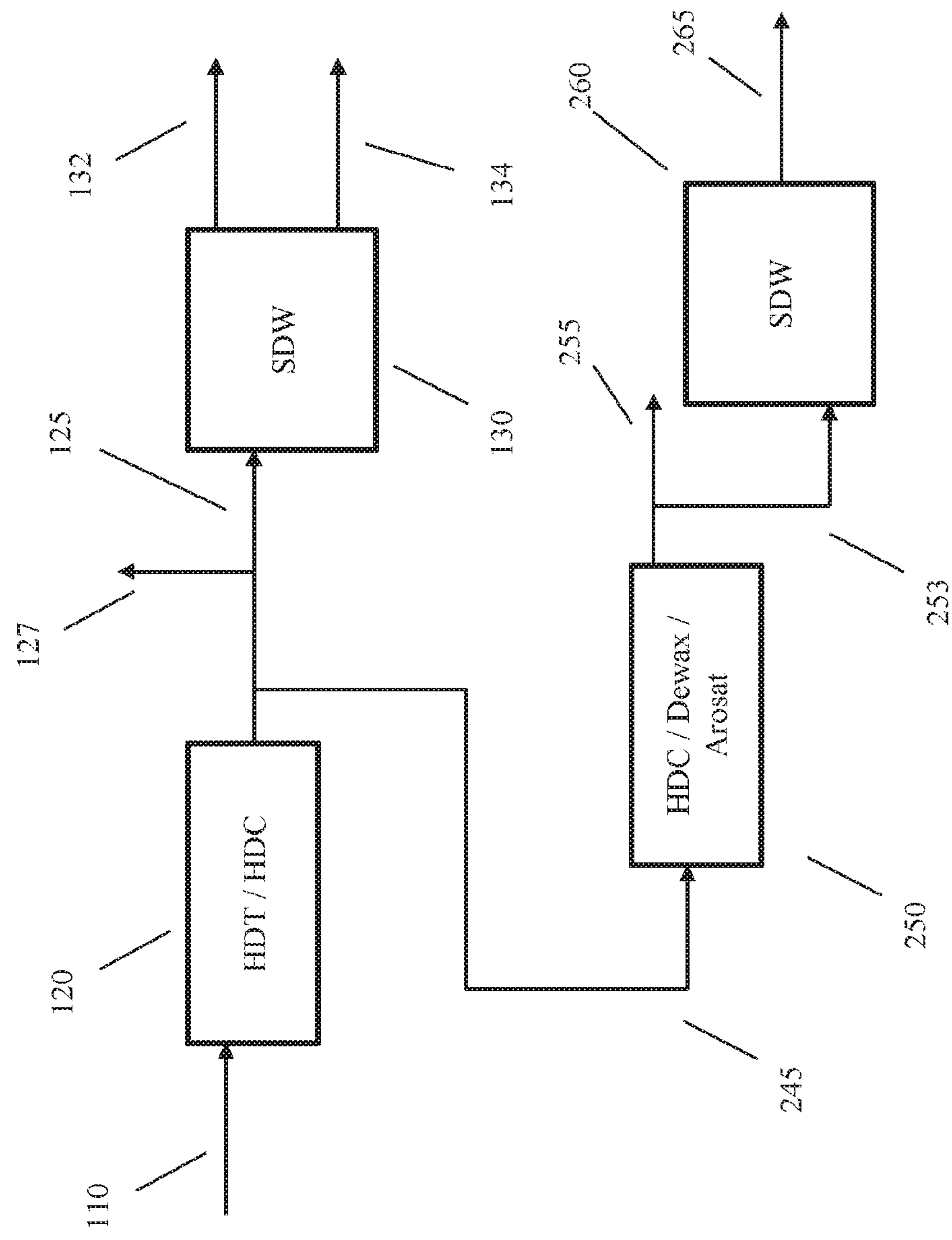


FIG. 2

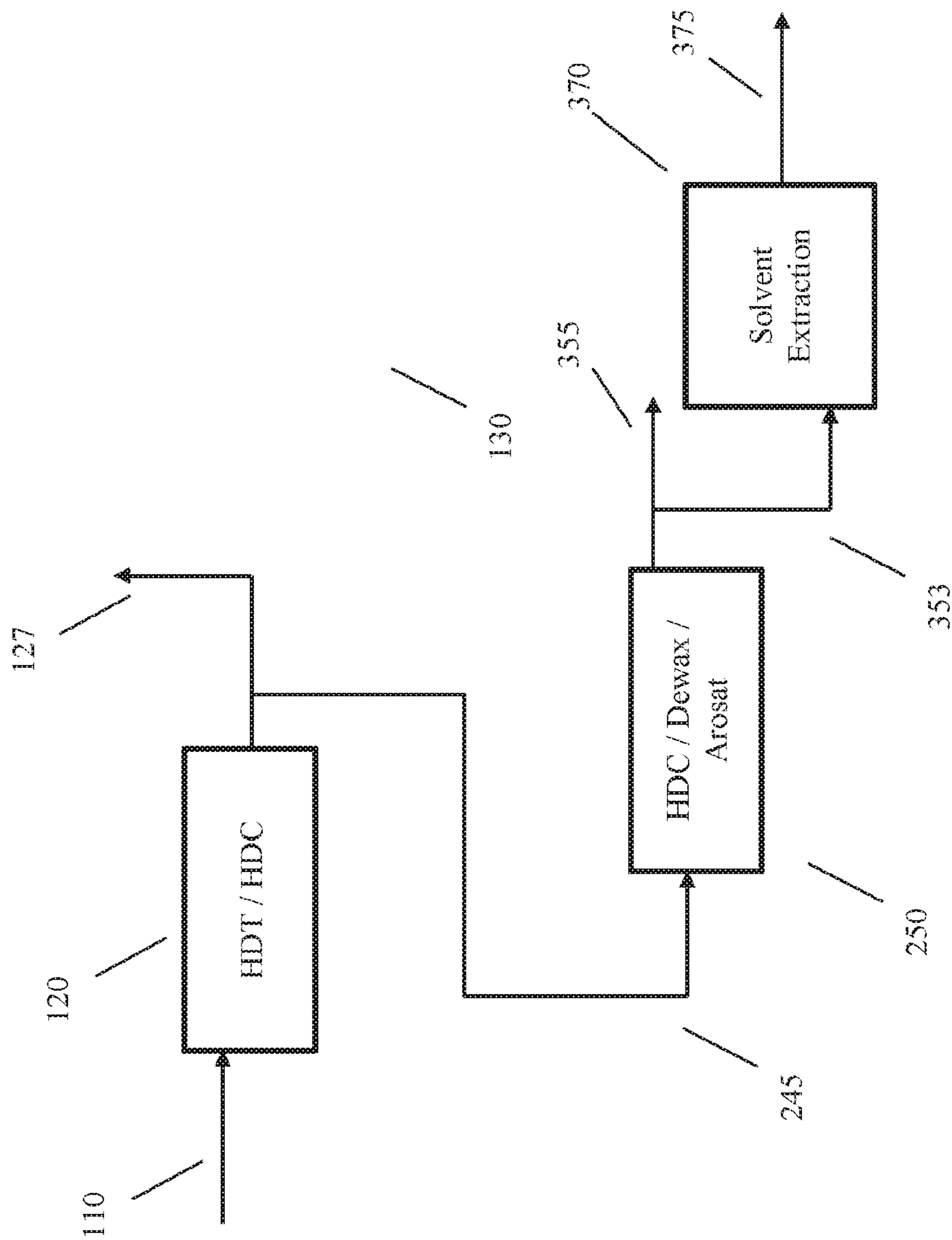


FIG. 3

C5 DAO (340°C TT) & C5 DAO+VGO STAGE 1: SDWed LUBE VI & KV VS. 510°C+ CONVERSION
2250 GSIG, 0.2 LHSV, 8000 SCF/B

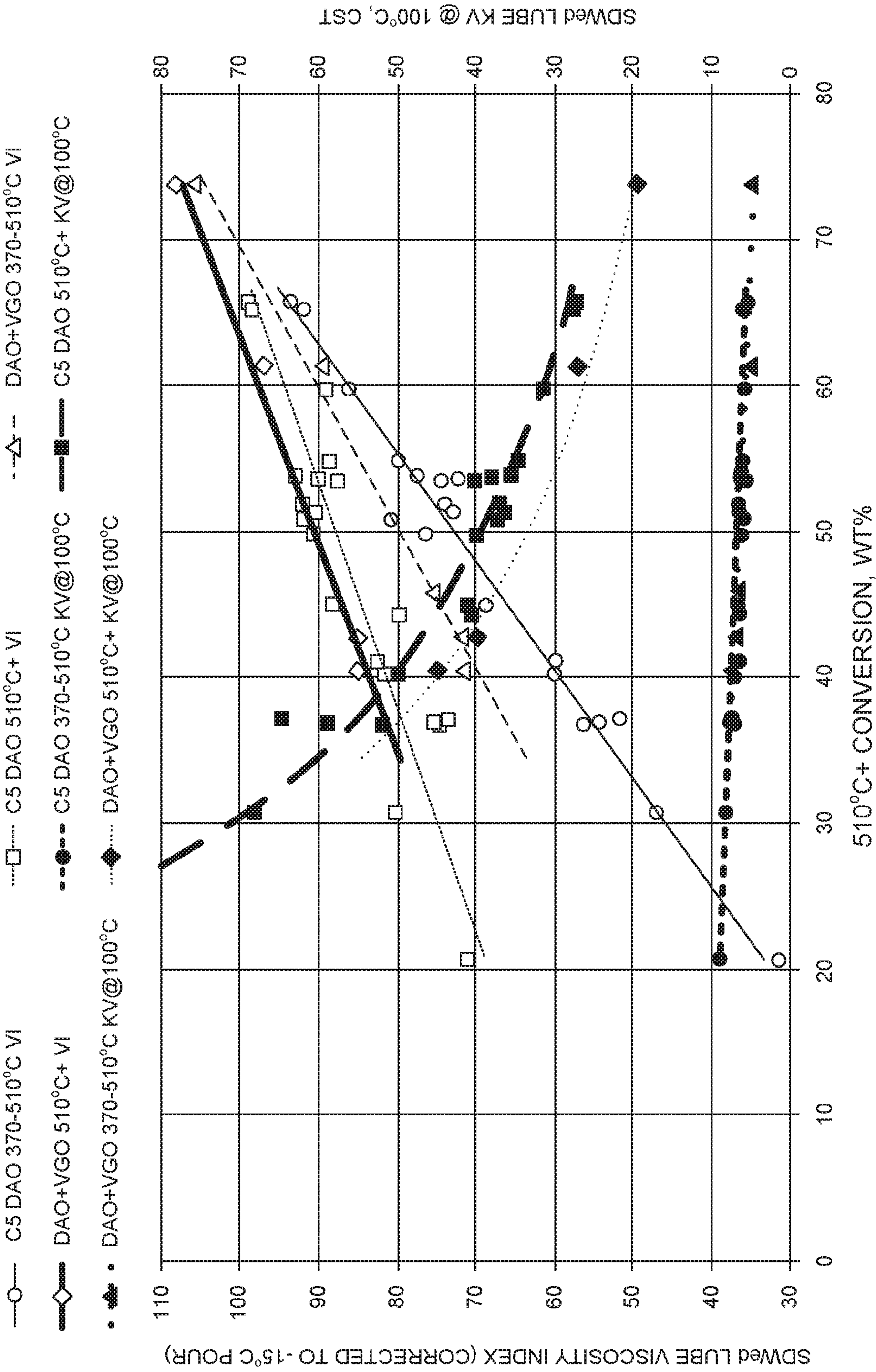


FIG. 4

HDW/HDF AND HDC/HDW/HDF OF 370°C+ HDC'ED 75% YIELD C5 DAO+HVGO+MVGO
VI PROFILE AND LUBE YIELDS FOR Feed 1 (ALL HDC IN ST. 1) VS. 2 STAGE HC (HDC IN ST. 1 & 2)

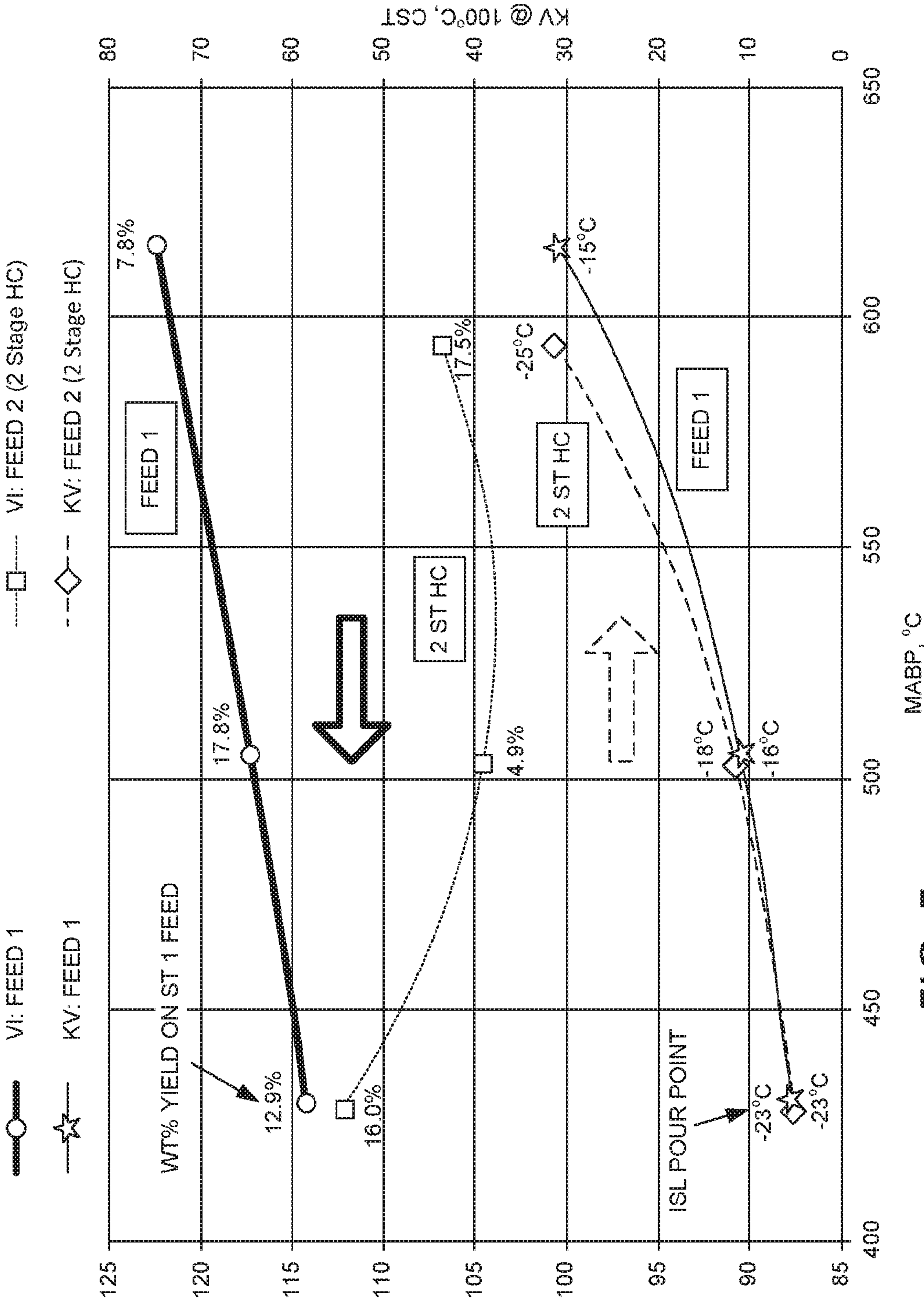


FIG. 5

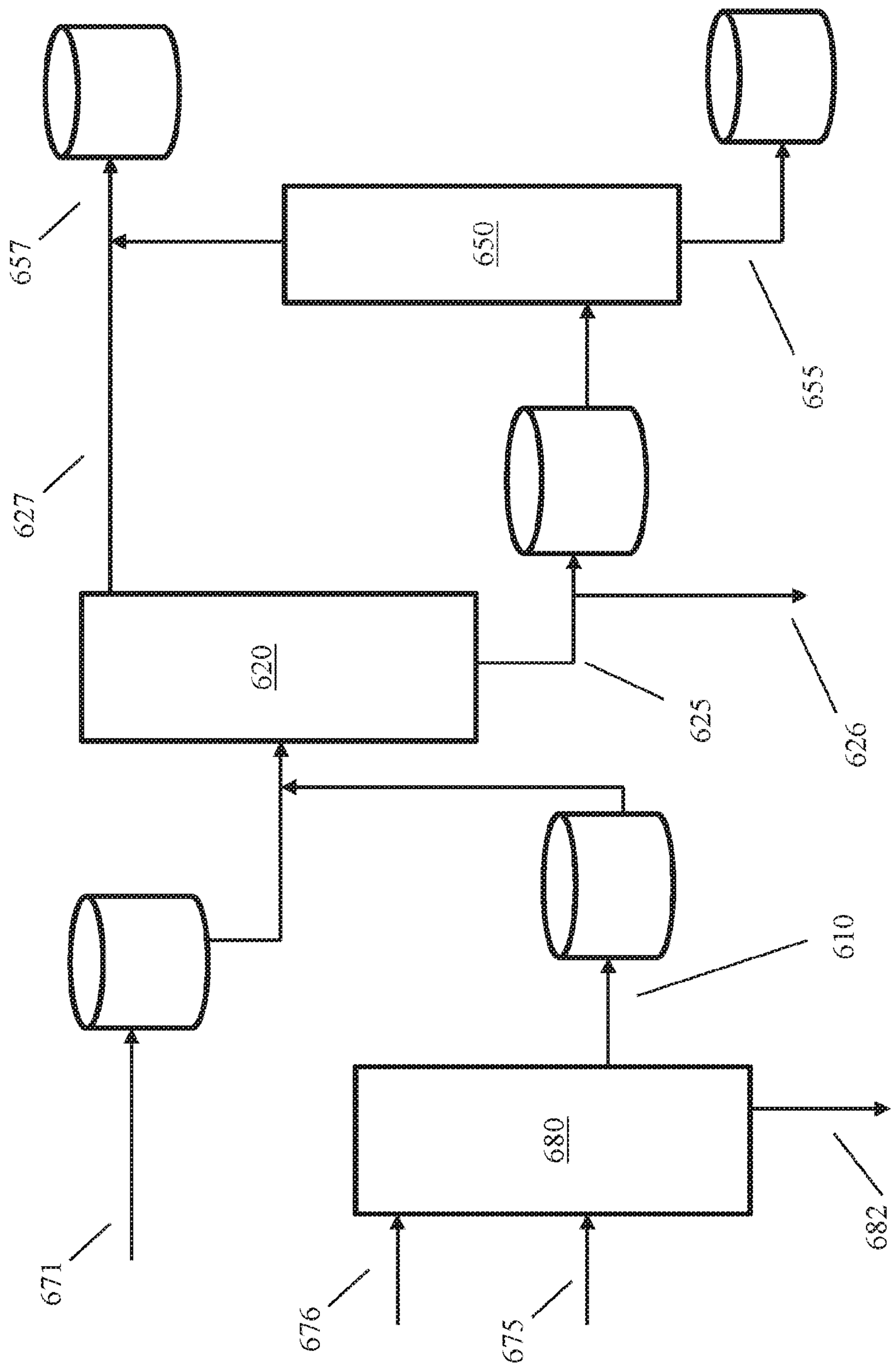


FIG. 6

			Ref 1	Ref 2	Sample I	Sample II	Sample III
2	KV100	cSt	28.13	33.42	31.08	29.45	29.97
3	KV40	cSt	389.6	435.2	391	361.3	383.3
4	VI		99	113	113	113	109
5	CCR	D4530	0.01	<0.01	0.01	0.01	0.01
6	Pour Point	D97	-18	-24	-27	-15	-18
7	Cloud Point	D2500	-18	6	-10	-2	6
8	Cloud Pour Spread	D97-D2500	0	30	17	13	24
9	SimDis, IBP		829	842	973	944	937
10	SimDis, 5%		922	966	1044	1021	1020
11	SimDis, 10%		958	1009	1061	1041	1043
12	SimDis, 30%		1031	1092	1100	1086	1090
13	SimDis, 50%		1079	1133	1128	1115	1119
14	SimDis, 70%		1126	1179	1161	1150	1155
15	SimDis, 90%		1203	1263	1216	1209	1213
16	SimDis, 95%		1443	1305	1247	1242	1245
17	SimDis, FBP		1331	1382	1320	1332	1327
18	Pr + Et	13C NMR	1.63	1.53	2.04	2.04	1.57
19	T/P Pr	13C NMR	0.81	0.76	0.91	1.09	0.78
20	T/P Et	13C NMR	0.82	0.77	1.13	0.95	0.79
21	(Pr + Et)/epsilon	13C NMR	0.127	0.101	0.161	0.136	0.090
22	Pr/epsilon	13C NMR	0.063	0.050	0.072	0.073	0.045
23	Et/epsilon	13C NMR	0.064	0.051	0.089	0.063	0.046
24	Peak Heat Exchange Rate duDSC	(W/g-°C)	4.64E-03	6.75E-04	0.000423	0.000809	9.42E-04
25	0 Rings	FDMS - corrected	1.77		0.03	0.03	0.03
26	1 Ring	FDMS - corrected	8.39		6.62	6.82	6.57
27	2 Rings	FDMS - corrected	15.88		17.65	17.57	17.38
28	3 Rings	FDMS - corrected	19.59		21.53	21.00	20.65
29	4 Rings	FDMS - corrected	18.85		18.65	18.52	18.68
30	5 Rings	FDMS - corrected	14.83		13.33	13.26	13.91
31	6 Rings	FDMS - corrected	9.47		8.21	8.43	8.72
32	(5+6)/(2+3)	FDMS - corrected	0.69		0.55	0.56	0.59
33	(1+2+3)/(4+5+6)	FDMS - corrected	1.02		1.14	1.13	1.08

FIG. 7

			Ref 1	Ref 2	Sample IV	Sample V	Sample VI	Sample II	Sample III
2	KV100		28.13	33.42	25.73	26.35	30.23	30.65	26.57
3	KV40	cSt	389.6	435.2	320.99	336.12	402.5	416	336.7
4	I		99	113	104	103	106	104	104
5	CCR	D4530	0.01	<0.01			0.03		
6	Pour Point	D97	-18	-24		-21	-21	-15	
7	Cloud Point	D2500	-18	6		3	9	13	
8	Cloud Pour Spread	D97-D2500	0	30		24	30		
9	SimDis, IBP		829	842	746	768	865	831	753
10	SimDis, 5%		922	966	887	889	938	938	889
11	SimDis, 10%		958	1009	927	928	967	971	929
12	SimDis, 30%		1031	1092	1006	1007	1032	1040	1010
13	SimDis, 50%		1079	1133	1064	1065	1085	1093	1069
14	SimDis, 70%		1126	1179	1127	1128	1143	1150	1134
15	SimDis, 90%		1203	1263	1227	1229	1242	1248	1244
16	SimDis, 95%		1443	1305	1279	1281	1291	1296	1302
17	SimDis, FBP		1331	1382	1362	1358	1364	1367	1382
18	Pr + Et	13C NMR	1.63	1.53	1.81	1.88	1.71	1.73	1.59
19	T/P Pr	13C NMR	0.81	0.76	0.88	0.91	0.83	0.86	0.81
20	T/P Et	13C NMR	0.82	0.77	0.93	0.97	0.88	0.87	0.78
21	(Pr + Et)/epsilon	13C NMR	0.127	0.101	0.134	0.133	0.124	0.117	0.107
22	Pr/epsilon	13C NMR	0.063	0.050	0.065	0.064	0.060	0.058	0.055
23	Et/epsilon	13C NMR	0.064	0.051	0.069	0.069	0.064	0.059	0.053
24	Peak Heat Exchange Rate	DSC	4.64E-03	6.75E-04	0.0013	0.00056	5.39E-04	7.82E-04	6.17E-04
25	0 Rings	FDMS - corrected	1.77		1.86	1.47	2.18	2.37	1.86
26	1 Ring	FDMS - corrected	8.39		11.90	13.30	10.31	10.66	10.66
27	2 Rings	FDMS - corrected	15.88		20.75	23.32	18.21	18.26	19.83
28	3 Rings	FDMS - corrected	19.59		21.97	22.95	20.83	20.29	21.87
29	4 Rings	FDMS - corrected	18.85		17.05	16.25	18.02	17.59	17.85
30	5 Rings	FDMS - corrected	14.83		10.90	9.30	13.08	12.95	11.90
31	6 Rings	FDMS - corrected	9.47		6.30	4.30	8.31	8.37	7.20
32	(5+6)/(2+3)	FDMS - corrected	0.69		0.40	0.29	0.55	0.55	0.46
33	(1+2+3)/(4+5+6)	FDMS - corrected	1.02		1.59	2.00	1.25	1.26	1.42

FIG. 8

	Base Stock	Character	Test Method	Units	Ref 1	Sample A	Sample B	Sample C	Sample D	Sample E	Sample F	Sample G
2	KV100			cSt	28.13	30.4	30.4	32.5	30.8	30	31	31.7
3	KV40			cSt	389.6	405.2	405.2	438.7	423.6	395.8	436.3	450.8
4	VI				99	106	106	108	103	106	102	101
5	CCR		D4530	wt%	0.01	<0.001	0	0.01	0.09	0.39	0.45	
6	Turbidity			ntu	0.53	2.7	2.86	4.25	3.56			
7	Pour Point		D97	C	-18	-33	-27		-24	-18	-24	-31*
8	Cloud Point		D2500	C	-18	-14	-14		-3	8.6*	6*	8.6*
9	Cloud Pour Spread		D97-D2500	C	0	19	13	0	21			
10	Total Saturates		D7419	%	99.6%			0.997				
11	SimDis, IBP		M1567	F	829	934	862	935	895	867	876	837
12	SimDis, 5%			F	922	987	986	995	946	948	943	913
13	SimDis, 10%			F	958	1008	1008	1017	971	974	970	947
14	SimDis, 30%			F	1031	1056	1058	1069	1031	1034	1031	1026
15	SimDis, 50%			F	1079	1097	1099	1113	1082	1086	1082	1086
16	SimDis, 70%			F	1126	1143	1146	1165	1139	1144	1139	1145
17	SimDis, 90%			F	1203	1226	1229	1250	1239	1244	1238	1240
18	SimDis, 95%			F	1443	1272	1273	1295	1288	1292	1287	1287
19	SimDis, FBP			F	1331	1360	1358	1365	1364	1358	1366	1360
20	Pr + Et		13C NMR	%	1.56	2.37	2.25	2.06	1.67	1.52	1.65	1.62
21	T/P Pr		13C NMR	%	0.74	1.05	1.00	0.95	0.69	0.82	0.84	0.84
22	T/P Et		13C NMR	%	0.82	1.32	1.25	1.11	0.98	0.70	0.81	0.78
23	(Pr + Et)/epsilon		13C NMR		0.1	0.192	0.227	0.193	0.100	0.090	0.114	0.103
24	Pr/epsilon		13C NMR		0.047	0.085	0.101	0.089	0.042	0.048	0.058	0.053
25	Et/epsilon		13C NMR		0.053	0.107	0.126	0.104	0.059	0.041	0.056	0.050
26	epsilon			%	16.23	12.350	9.930	10.67	16.580	16.930	14.520	15.750
FIG. 9												

Base Stock Character	Test Method	Units	Ref 1	Sample A	Sample B	Sample C	Sample D	Sample E	Sample F	Sample G
28 1 Ring	FTICR-MS	%	11.34	13.50		12.55	13.80	16.17	12.07	14.13
29 2 Rings	FTICR-MS	%	18.01	20.07		21.77	17.30	17.66	15.33	14.69
30 3 Rings	FTICR-MS	%	19.70	20.62		21.66	16.69	16.69	16.57	15.05
31 4 Rings	FTICR-MS	%	17.35	16.49		16.93	14.46	14.20	14.65	13.02
32 5 Rings	FTICR-MS	%	13.44	11.45		11.52	11.24	10.62	11.93	11.21
33 6 Rings	FTICR-MS	%	8.93	6.82		6.78	8.16	7.19	8.90	8.35
34 7 Rings	FTICR-MS	%	4.79	3.56		3.00	5.13	4.29	5.54	6.07
35 8 Rings	FTICR-MS	%	2.06	1.80		1.15	3.56	2.43	4.54	4.38
36 9 Rings	FTICR-MS	%	0.35	0.66		0.20	1.73	0.98	2.84	2.73
41 5+	FTICR-MS	%	29.66	24.35		22.64	30.67	25.57	35.87	35.16
42 6+	FTICR-MS	%	16.22	12.90		11.12	19.43	14.95	23.94	23.95
43 7+	FTICR-MS	%	7.29	6.09		4.35	11.27	7.76	15.04	15.59
8+	FTICR-MS	%	2.50	2.53		1.35	6.14	3.47	9.50	9.53
9+	FTICR-MS	%	0.43	0.73		0.20	2.59	1.04	4.96	5.14
44 11+	FTICR-MS	%	0.02	0.00		0	0.23	0.03	0.75	0.90
5+ / 2	FTICR-MS		1.65	1.21		1.04	1.77	1.45	2.34	2.39
6+ / 2	FTICR-MS		0.90	0.64		0.51	1.12	0.85	1.56	1.63
7+ / 2	FTICR-MS		0.40	0.30		0.20	0.65	0.44	0.98	1.06
46 0 Rings	FDMS - corrected	%	3.24	3.62		4.70	4.88	7.50		7.33
47 1 Ring	FDMS - corrected	%	10.05	9.08		11.32	11.01	12.34		12.09
48 2 Rings	FDMS - corrected	%	15.64	17.71		18.87	16.43	15.96		14.51
49 3 Rings	FDMS - corrected	%	19.41	22.05		22.55	17.95	17.39		14.61
50 4 Rings	FDMS - corrected	%	19.38	19.77		19.24	16.51	16.67		14.48
51 5 Rings	FDMS - corrected	%	15.85	14.25		13.39	13.74	14.24		13.36
52 6 Rings	FDMS - corrected	%	10.29	9.07		8.03	10.52	11.19		11.32
53 7 Rings	FDMS - corrected	%	3.93	2.59		1.12	3.54	1.99		3.15
54 8 Rings	FDMS - corrected	%	1.83	1.21		0.60	2.84	1.70		3.61
55 9 Rings	FDMS - corrected	%	0.31	0.59		0.17	1.64	0.94		2.63
56 9+	FDMS - corrected	%	0.39	0.66		0.17	2.58	1.03		5.54
57 6+	FDMS - corrected	%	16.43	13.53		9.92	19.47	15.90		23.62
58 (2+3)/1	FDMS - corrected		3.49	4.38		3.66	3.12	2.70		2.41
59 (1+2+3)/(4+5+6)	FDMS - corrected		0.99	1.13		1.30	1.11	1.09		1.05

FIG. 10