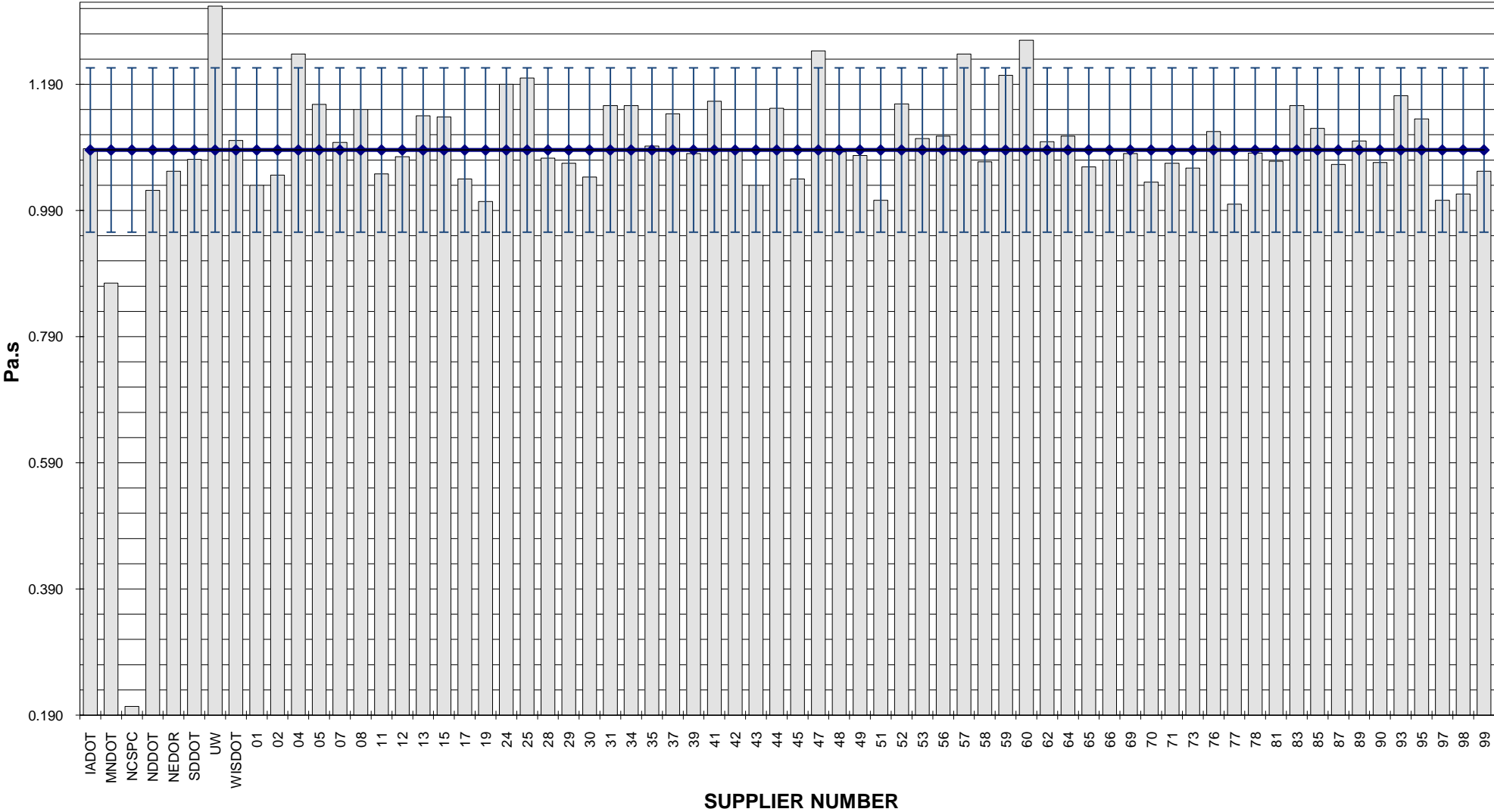


**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
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Supplier Number	Rotational Viscosity (Pa.s) @135°C	DSR Original (kPa) @70°C	DSR RTFO (kPa) @70°C	DSR PAV (kPa) @25°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-18°C	BBR m-value @-18°C	Strain (%) @-18°C	DTT Stress (MPa) @-18°C	CRITICAL CRACK TEMP (°C)	MSCR % RECOVERY @ 100Pa	MSCR % RECOVERY @ 3200Pa
IADOT	1.088	1.17	2.86	1520	-0.721	206	0.333				67.54	64.91
MNDOT	0.875	1.15	3.03	1642	-0.843	187	0.336					
NCSPC	0.204	1.15	2.71	1370	-0.636	206	0.334				65.94	61.54
NDDOT	1.022	1.28	2.84	1569	-0.814	213	0.333				68.89	65.56
NEDOR	1.052	1.23	3.17	1605	-0.655	231	0.333				70.11	67.99
SDDOT	1.071	1.20	3.26	1933	-0.748	223	0.323				59.72	50.08
UW	1.314	1.21	2.91	1613	-0.275	245	0.337					
WISDOT	1.101	1.06	2.49	1595	-0.732	208	0.333					
01	1.030	1.12	3.29	1600	-0.715	197	0.322				57.85	46.36
02	1.046	1.20	2.95	1798	-0.676	239	0.338				70.30	69.50
04	1.238	1.07	2.50	1528	-0.752	216	0.318					
05	1.158	1.14	2.73	1572	-0.595	194	0.330				61.81	60.25
07	1.098	1.20	2.65	1697	-0.722	213	0.325				62.27	59.26
08	1.150	1.15	2.61	1463	-0.728	201	0.330				61.93	59.92
11	1.048	1.22	3.03	1388	-0.697	196	0.350				71.20	69.50
12	1.075	1.20	2.80	1654	-0.800	213	0.330					
13	1.140	1.16	3.14	1610	-0.669	202	0.337				67.27	66.74
15	1.138	1.11	3.04	1433	-0.693	179	0.342				76.04	68.05
17	1.040	1.09	3.13	1745	-0.768	203	0.334				57.33	45.78
19	1.004	1.13	3.03	1403	-0.871	236	0.338					
24	1.190	1.19	3.13	1650	-0.674	193	0.337				69.14	67.00
25	1.200	1.09	3.07	1993	-0.855	223	0.335				68.68	64.01
28	1.073	1.22	3.06	1678	-0.672	221	0.324				69.70	67.50
29	1.065	1.15	3.37	1831	-0.779	222	0.327				72.40	71.30
30	1.043	1.12	2.81	1632	-0.731	208	0.342					
31	1.156	1.16	2.83	1482	-0.557	195	0.340				62.00	60.79
34	1.156	1.26	3.13	1677	-0.904	233	0.331				71.50	70.10
35	1.092	1.25	3.10	1660	-0.794	216	0.318					
37	1.143	1.06	2.53	1697	-0.299	226	0.339				70.20	68.20
39	1.080	1.14	2.98	1599	-0.719	211	0.332				71.07	69.47
41	1.163	1.13	2.75	1582	-0.729	202	0.331				61.85	60.42
42	1.088	1.15	2.87	1710	-0.934	226	0.326					
43	1.030	1.13	2.79	1560	-0.748	226	0.343				70.74	68.75
44	1.152	1.17	2.71	1633	-0.723	199	0.325				62.42	60.45
45	1.040	1.13	3.28	1800	-0.750	196	0.336				58.69	47.93
47	1.243	1.17	2.85	1516	-0.749	221	0.338					
48	1.083	1.19	3.14	1649	-0.883	234	0.337				70.70	69.00
49	1.077	1.13	2.81	1740	-0.929	220	0.334				68.17	65.63
51	1.006	1.16	2.82	1440	-0.862	235	0.340					
52	1.159	1.14	2.68	1564	-0.583	191	0.329				61.95	60.48
53	1.104	1.11	3.14	1486	-0.885	204	0.331					
56	1.108	1.18	2.86	1864	-0.782	229	0.329				69.80	68.00
57	1.238	1.15	2.84	1512	-0.742	206	0.337					
58	1.067	1.17	2.98	1450	-0.793	217	0.338				69.00	66.58
59	1.204	1.10	3.07	1973	-0.867	222	0.333				68.91	66.29
60	1.260	1.19	2.86	1770	-0.919	263	0.316					
62	1.099	1.19	2.91	1957	-0.775	237	0.319				70.60	69.00
64	1.108	1.13	3.43	1495	-0.795	206	0.328					
65	1.059	1.09	3.04	1522	-0.830	176	0.339				58.90	48.10
66	1.070	1.21	3.12	1689	-0.659	228	0.326				67.90	65.70
69	1.080	1.15	2.65	1626	-0.717	215	0.336	3.56	6.43	-33.40	60.98	57.83
70	1.035	1.23	3.01	1517	-0.689	201	0.338				72.70	71.50
71	1.065	1.12	2.59	1514	-0.709	208	0.348					
73	1.057	1.13	2.64	1586	-0.754	202	0.337					
76	1.115	1.11	2.93	1511	-0.520	195	0.341				67.70	65.00
77	1.000	1.20	3.33	1820	-0.884	242	0.319				68.85	66.71
78	1.081	1.18	3.02	1480	-0.794	219	0.337				68.95	66.51
81	1.068	1.18	3.03	1530	-0.799	218	0.334				68.69	66.20
83	1.156	1.15	2.65	1383	-0.733	192	0.327				61.80	60.54
85	1.120	1.10	3.08	1513	-0.508	184	0.340				63.40	59.40
87	1.063	1.12	2.84	1590	-0.647	206	0.335				70.70	68.80
89	1.100	1.13	3.00	1486	-0.703	191	0.342				70.29	67.98
90	1.066	1.21	3.03	1702	-0.690	221	0.330				67.20	64.80
93	1.172	1.18	3.18	1720	-0.674	207	0.335				67.63	67.75
95	1.135	1.17	3.00	1561	-0.688	199	0.343					
97	1.006	1.14	2.84	1350	-0.834	222	0.343					
98	1.016	1.18	3.02	1536	-0.857	235	0.340					
99	1.052	1.20	2.85	1750	-0.701	229	0.323				68.70	66.50
Average	1.086	1.16	2.94	1614	-0.734	213	0.333	3.56	6.43	-33.40	66.88	63.74
Std. Dev.	0.1303	0.0467	0.2134	146.52	0.1217	17.10	0.0073	#DIV/0!	#DIV/0!	#DIV/0!	4.5160	6.5685
Coef. of Var.	11.997	4.030	7.262	9.080	16.568	8.029	2.199	#DIV/0!	#DIV/0!	#DIV/0!	6.753	10.305

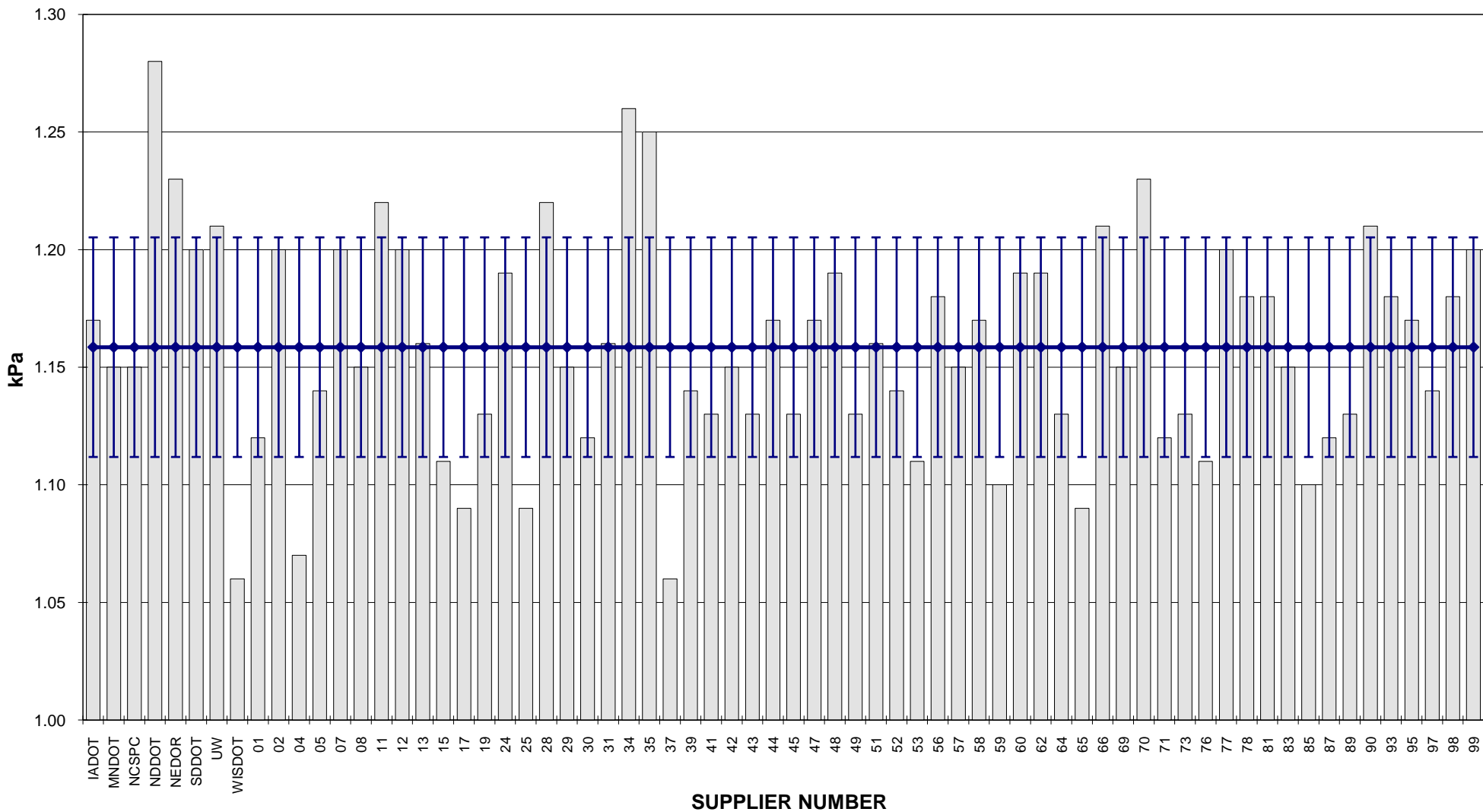
COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
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ROTATIONAL VISCOSITY



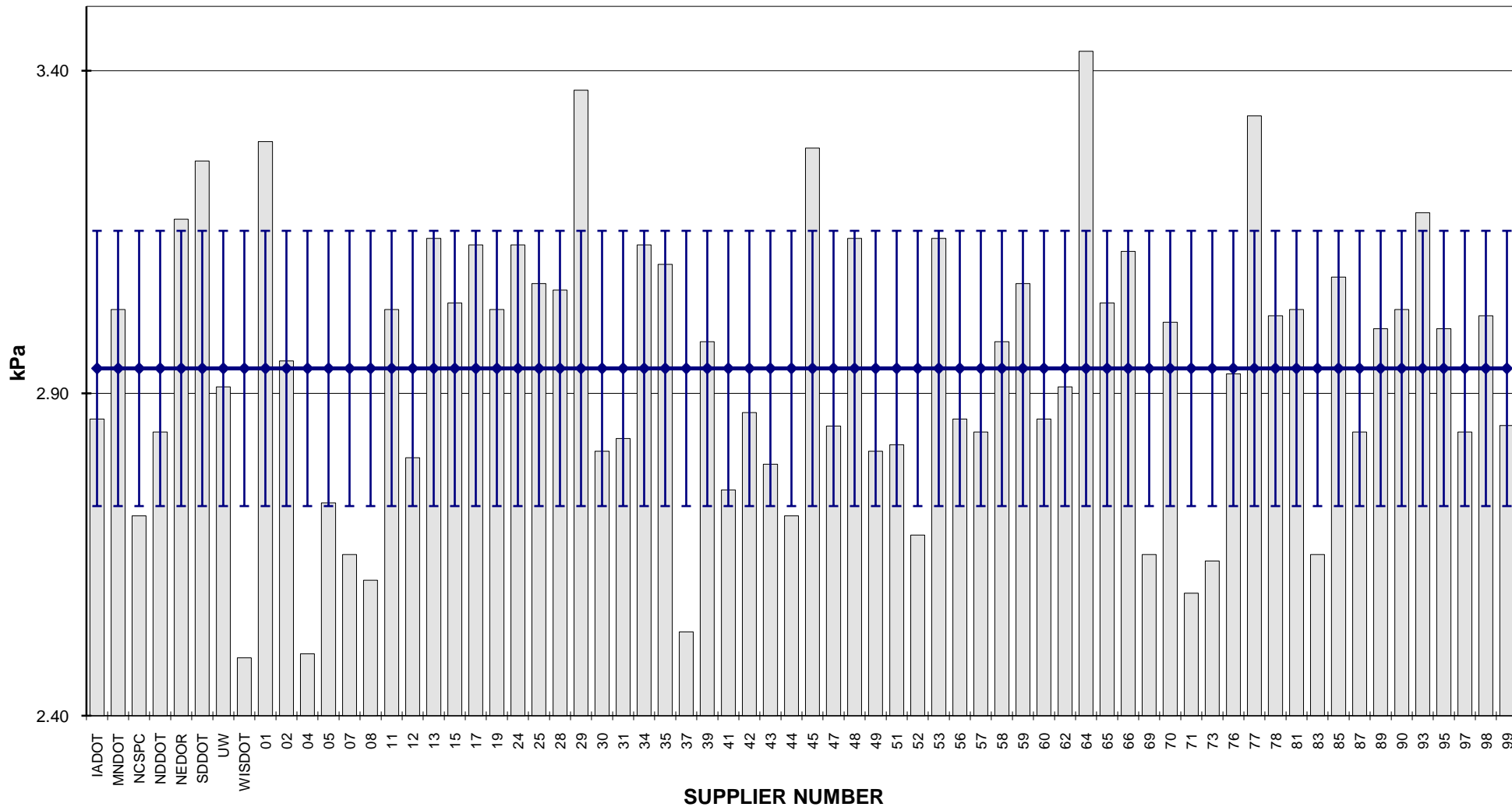
**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
PG 70-28**

DSR - ORIGINAL

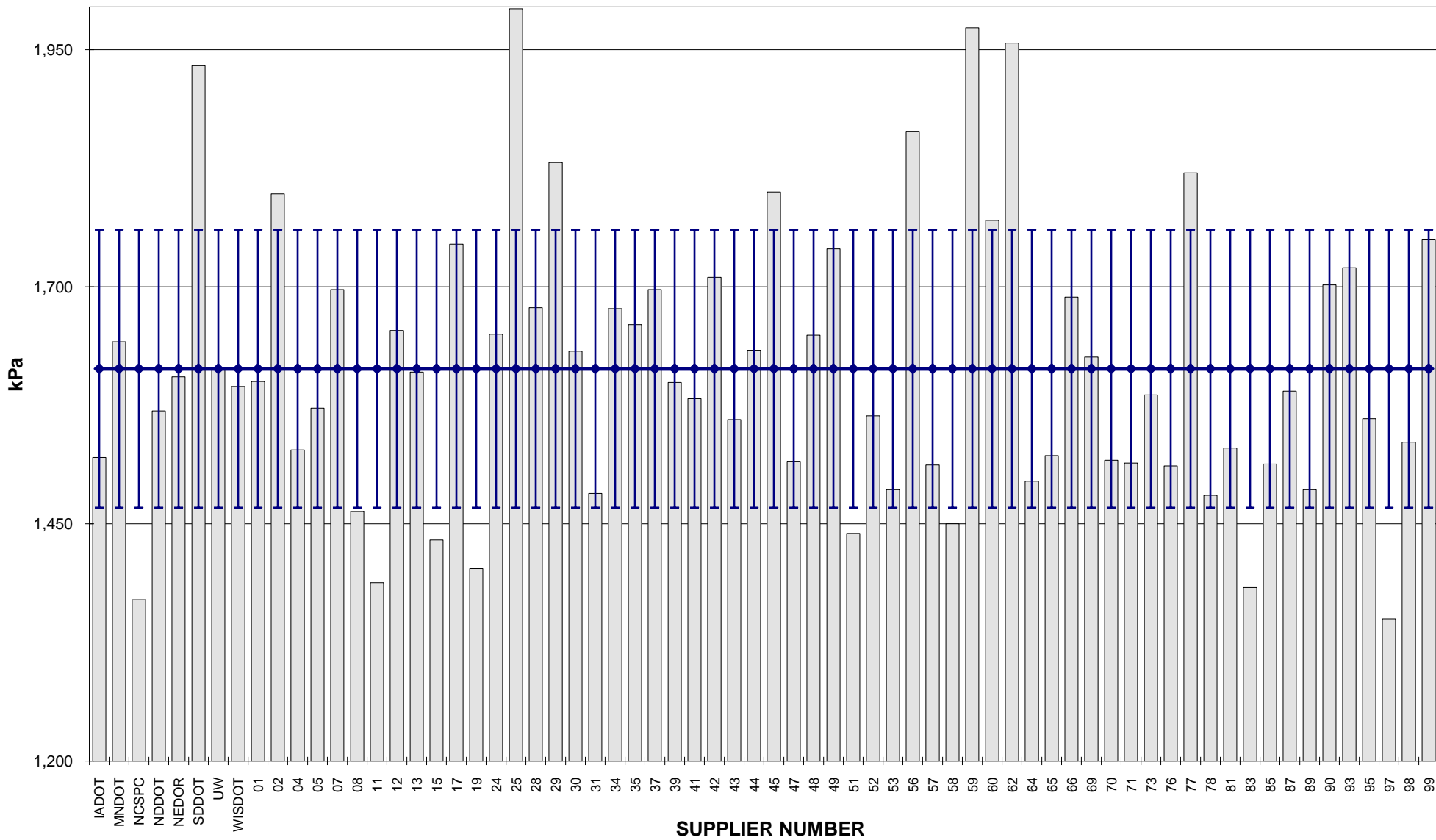


**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
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DSR - RTFO



**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
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DSR - PAV**

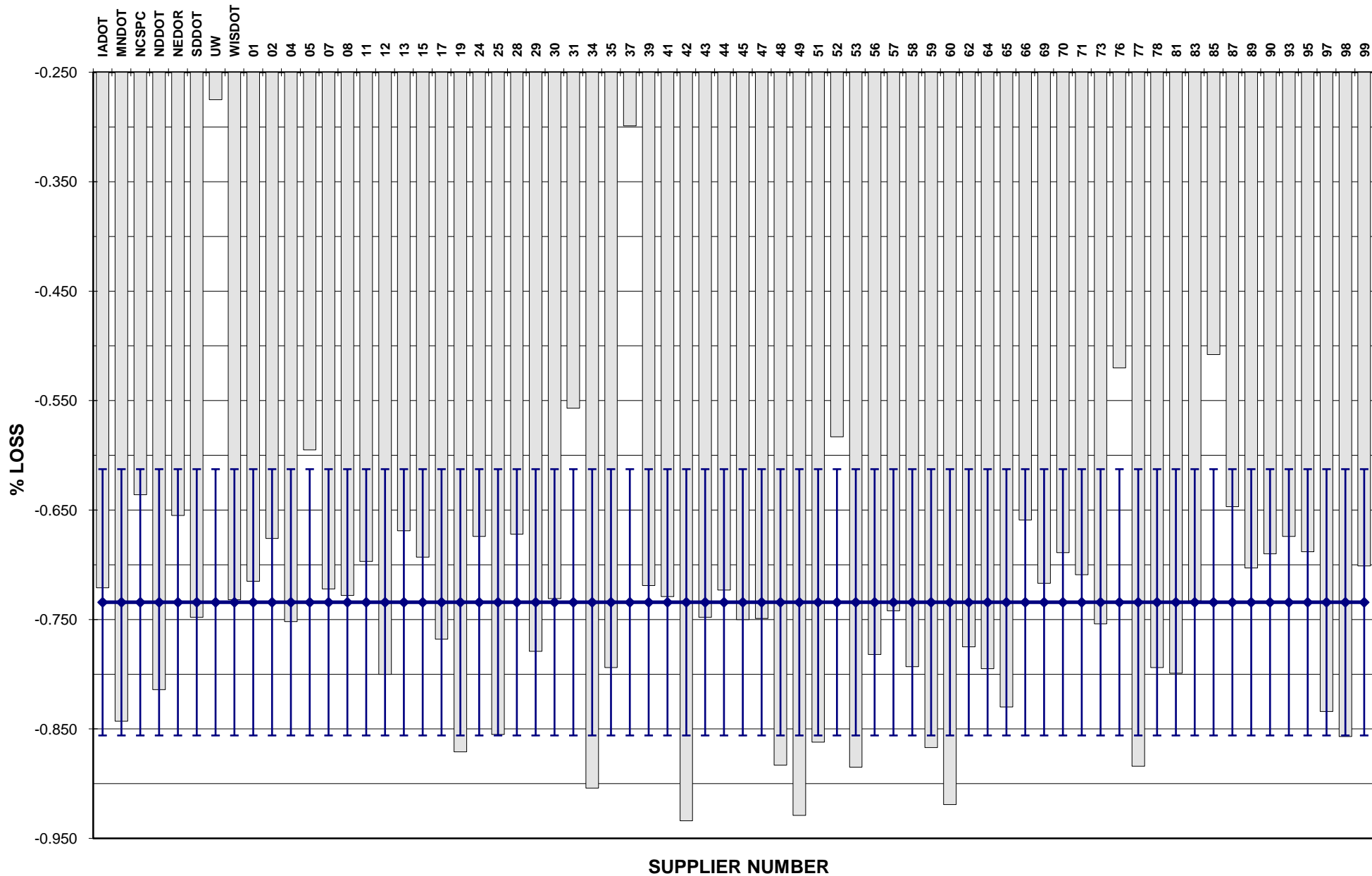


COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3

SUMMARY A

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RTFO MASS LOSS

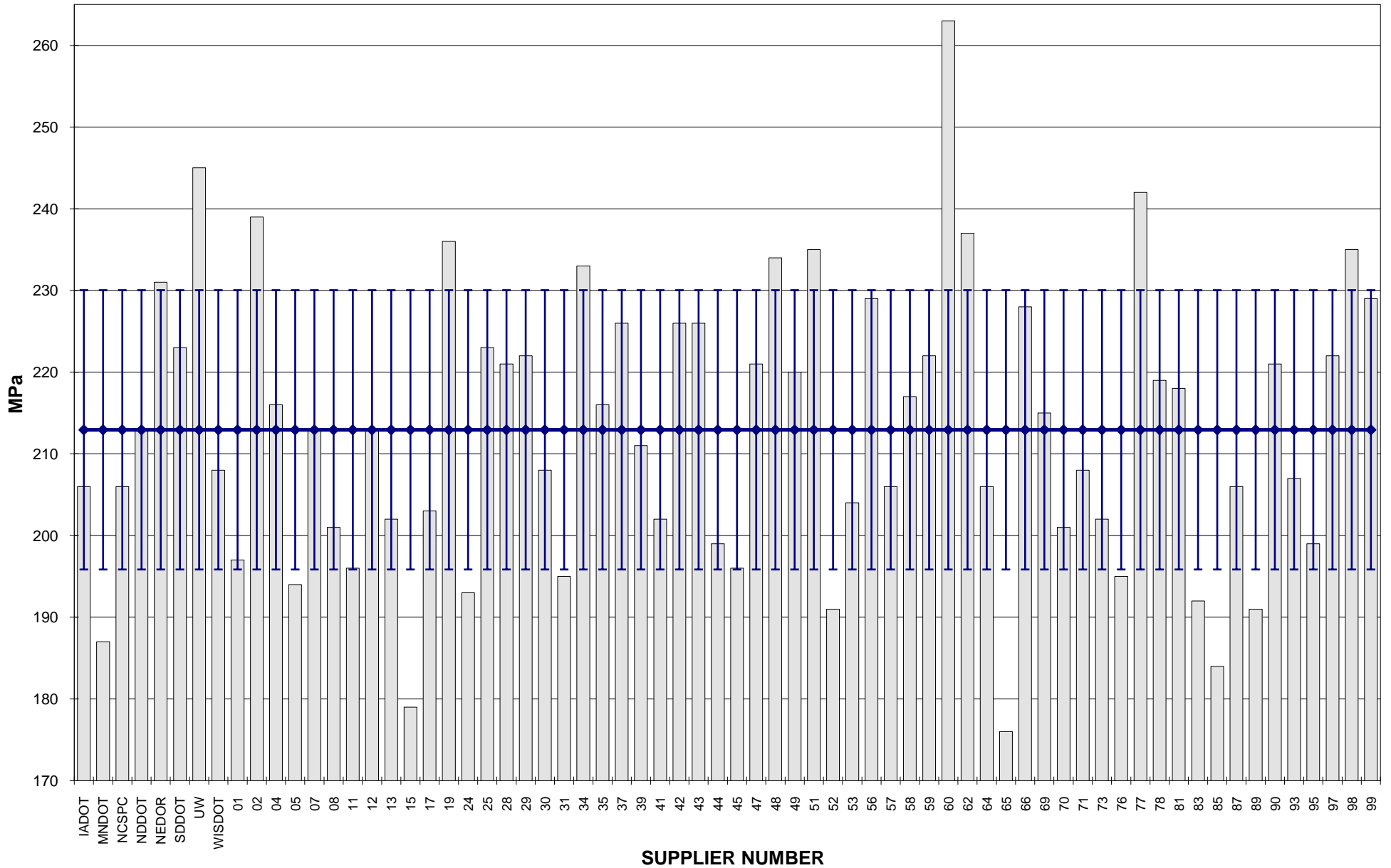


COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3

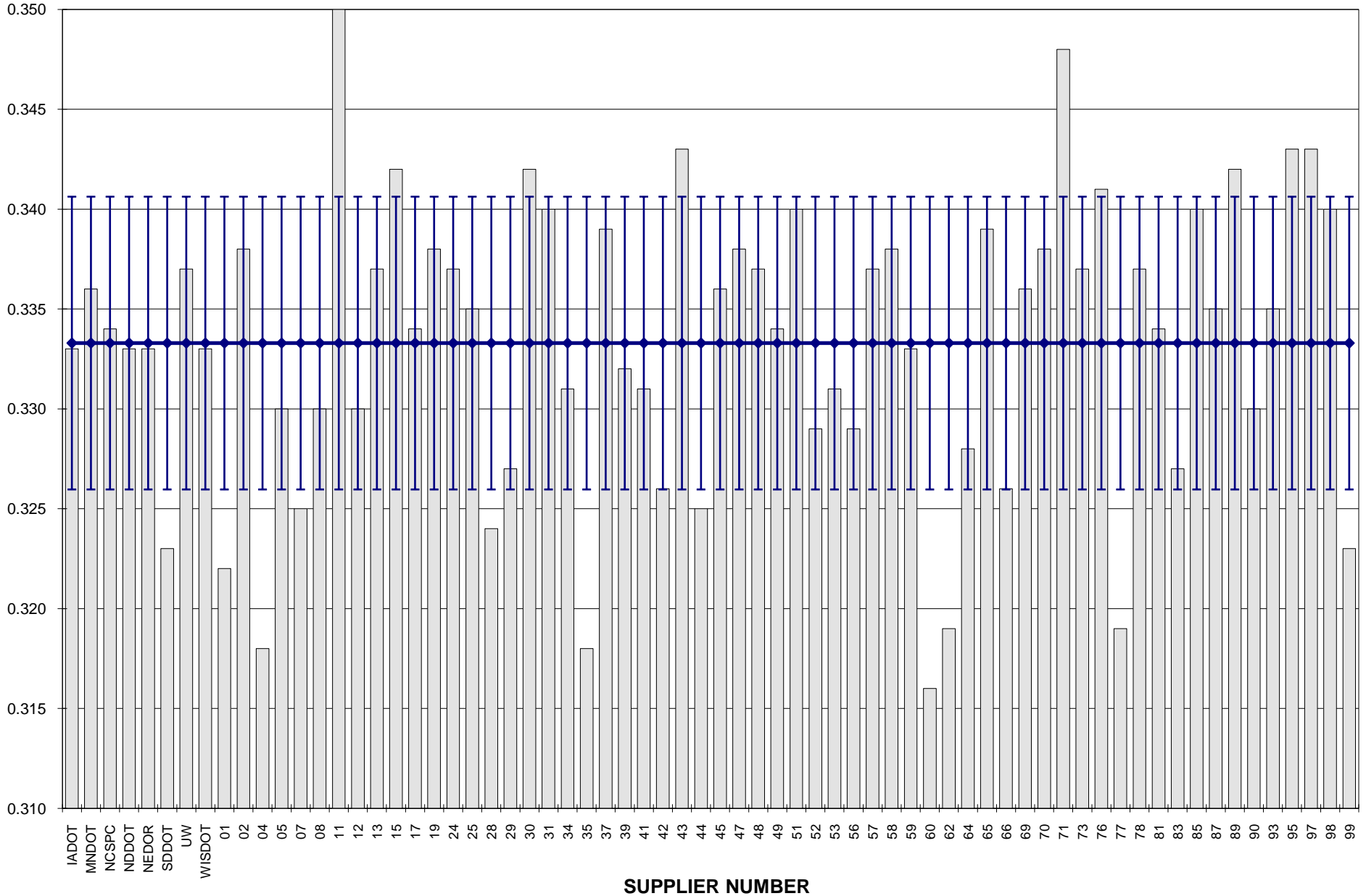
SUMMARY A

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BBR STIFFNESS



**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
PG 70-28
BBR m-VALUE**



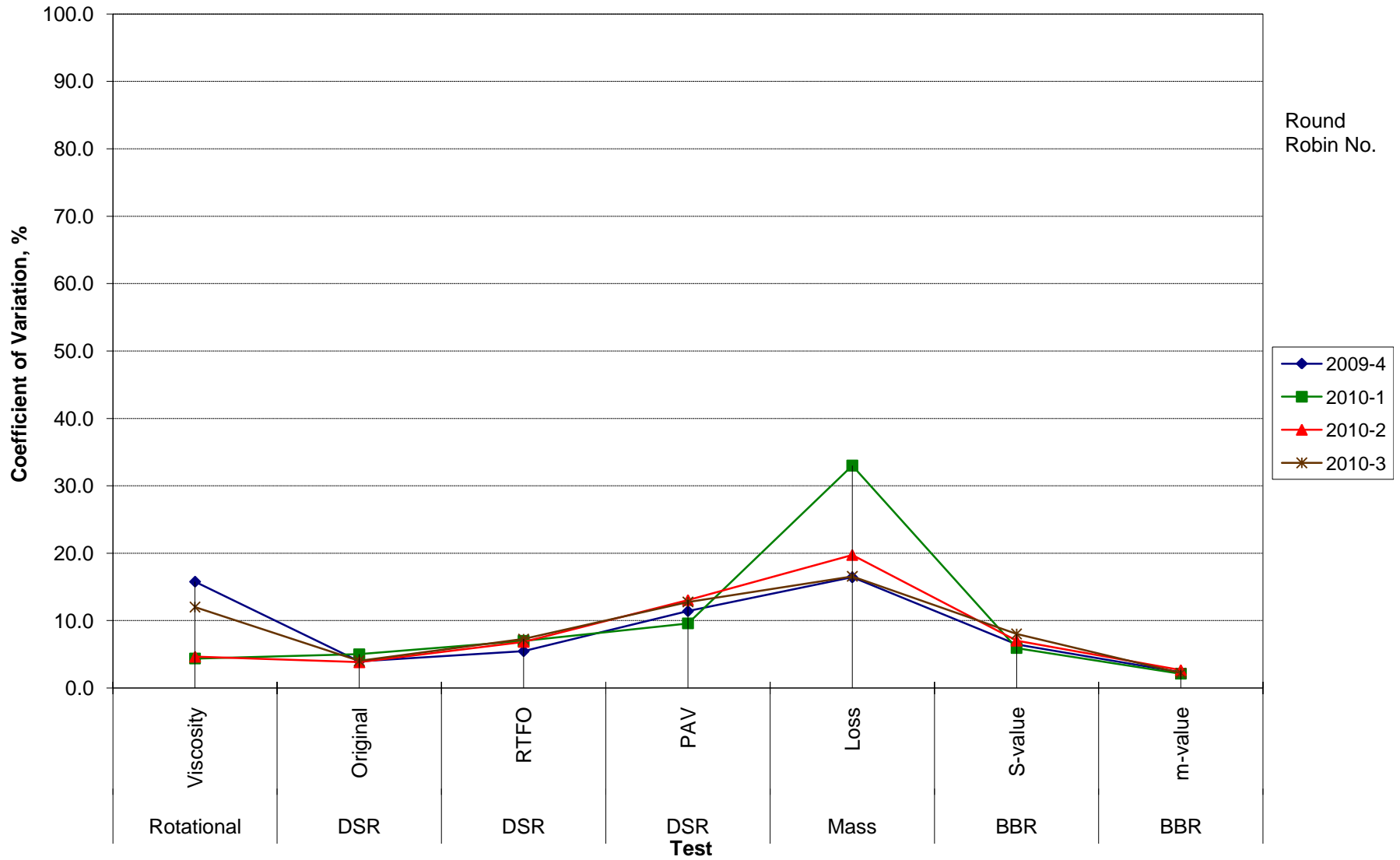
**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
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COEFFICIENT OF VARIATION

Round Robin No.	Number of Participants	Coefficient of Variation, %							
		Rotational Viscosity	DSR Original	DSR RTFO	DSR PAV	Mass Loss	BBR S-value	BBR m-value	DTT Strain
2009-4	66	15.785	3.944	5.455	11.405	16.430	6.485	2.318	29.809
2010-1	67	4.375	5.009	6.987	9.588	32.991	5.926	2.121	30.372
2010-2	66	4.651	3.829	6.852	13.055	19.736	7.036	2.666	33.142
2010-3	68	11.997	4.030	7.262	12.764	16.568	8.029	2.199	

COMBINED STATE BINDER GROUP ROUND ROBIN 2010-3
SUMMARY A
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COEFFICIENT OF VARIATION



**COMBINED STATE BINDER GROUP ROUND ROBIN 2010-
SUMMARY A
PG 70-28**

STATISTICS WITH OUTLIERS REMOVED:

	Rotational Viscosity (Pa.s) @135°C	DSR Original (kPa) @64°C	DSR RTFO (kPa) @64°C	DSR PAV (kPa) @25°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-12°C	BBR m-value @-12°C
Average	1.099	1.16	2.94	1,614	-0.748	213	0.333
Std. Dev.	0.0627	0.0467	0.2134	147.63	0.0944	17.10	0.0073
Coef. of Var.	5.701	4.030	7.262	9.149	12.621	8.029	2.199