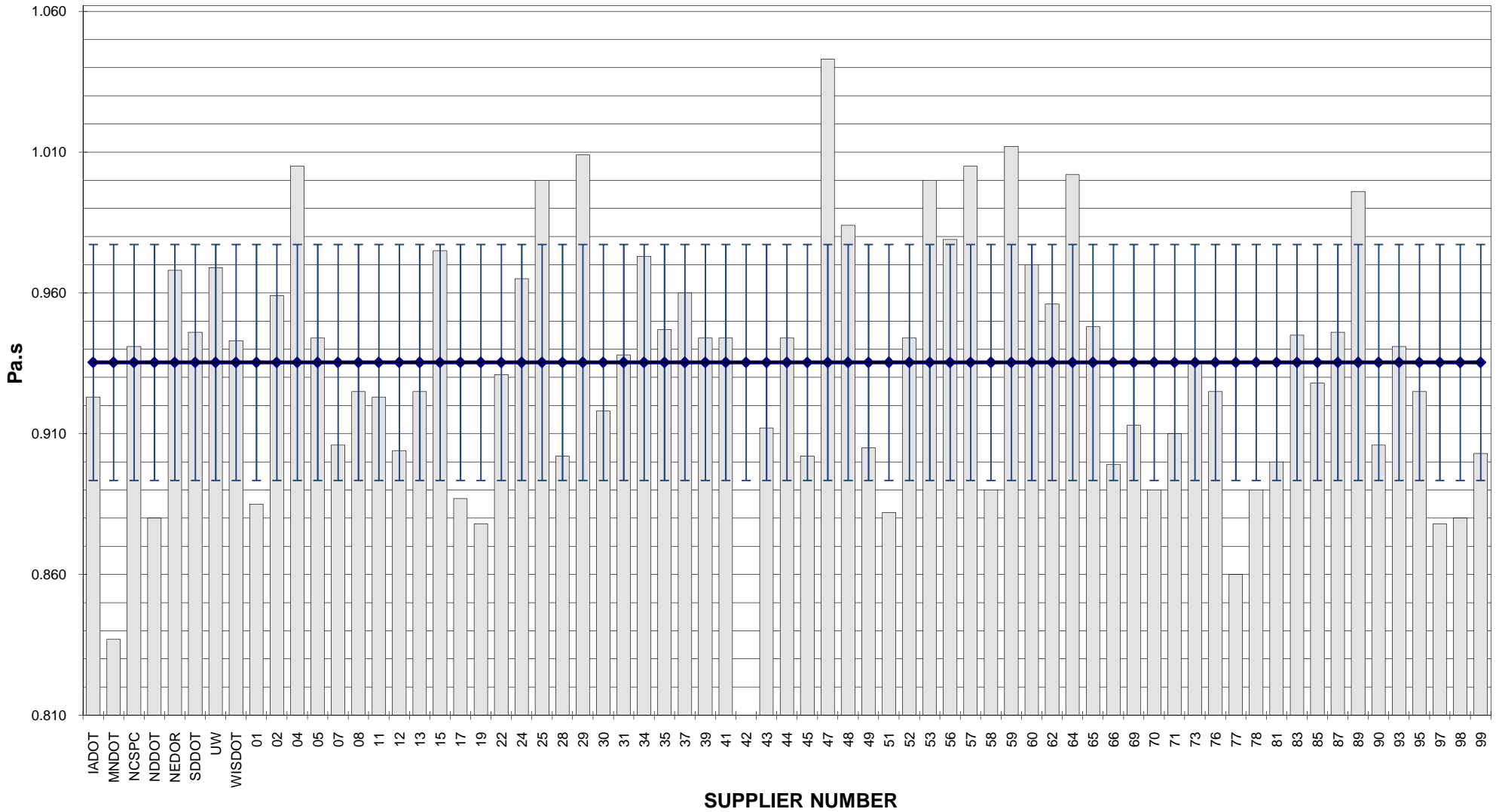


COMBINED STATE BINDER GROUP ROUND ROBIN 2011-3
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Supplier Number	Rotational Viscosity (Pa.s) @135°C	DSR Original (kPa) @70°C	DSR RTFO (kPa) @70°C	DSR PAV (kPa) @25°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-18°C	BBR m-value @-18°C	DTT Strain (%) @-18°C	DTT Stress (MPa) @-18°C	CRITICAL CRACK TEMP (°C)	MSCR % RECOVERY @ 100Pa @58° C	MSCR % RECOVERY @ 3200Pa @ 58° C
IADOT	0.923	1.44	3.06	1550	-0.273	181	0.322				83.43	83.50
MNDOT	0.837	1.49	3.45	1455	-0.349		0.318				72.80	65.20
NCSPC	0.941	1.45	3.22	1730	-0.351	172	0.325				80.84	84.24
NDDOT	0.880	1.47	3.20	1478	-0.296	175	0.331				84.58	84.51
NEDOR	0.968	1.51	3.42	1691	-0.258	194	0.324				84.01	84.09
SDDOT	0.946	1.47	3.40	1615	-0.288	178	0.309				71.94	64.50
UW	0.969	1.43	3.35	1980	-0.454	220	0.313					
WISDOT	0.943	1.37	2.81	1871	-0.136	171	0.334					
01	0.885	1.37	3.36	1441	-0.238	180	0.328				83.95	84.21
02	0.959	1.54	3.55	1689	-0.306	196	0.314				84.53	85.76
04	1.005	1.62	3.54	1631	-0.279	189	0.321					
05	0.944	1.42	3.32	1655	-0.371	182	0.315				76.48	77.68
07	0.906	1.45	2.93	1649	-0.285	180	0.326				75.62	75.53
08	0.925	1.43	3.24	1632	-0.327	173	0.320				76.29	77.66
11	0.923	1.49	3.63	1619	-0.319	199	0.313				84.93	86.14
12	0.904	1.53	3.14	1550	-0.300	173	0.326					
13	0.925	1.42	3.33	1550	-0.301	176	0.326	3.08	4.93	-32.2	84.41	84.10
15	0.975	1.33	3.18	1628	-0.301	174	0.327				84.27	85.32
17	0.887	1.42	3.42	1710	-0.275	182	0.324				84.02	84.14
19	0.878	1.44	3.21	1473	-0.294	200	0.330				86.20	86.90
22	0.931	1.42	3.19	1652	-0.353	171	0.320				76.47	77.52
24	0.965	1.38	3.31	1560	-0.299	178	0.332	2.58	4.95	32.8	81.90	84.40
25	1.000	1.42	3.40	1782	-0.313	184	0.321				80.97	81.97
28	0.902	1.37	3.41	1929	-0.291	209	0.315				84.05	84.65
29	1.009	1.57	3.50	1732	-0.316	206	0.309				84.50	85.96
30	0.918	1.37	3.08	1417	-0.284	182	0.332					
31	0.938	1.46	3.29	1629	-0.351	179	0.320				75.73	77.44
34	0.973	1.57	3.14	1812	-0.280	196	0.326				84.33	86.34
35	0.947	1.52	3.42	1260	-0.319	186	0.327					
37	0.960	1.56	3.17	1879	-0.276	192	0.323	3.14	5.25	-31.10	84.59	86.31
39	0.944	1.48	3.17	1779	-0.353	173	0.315				75.80	77.65
41	0.944	1.45	3.09	1551	-0.316	179	0.322				75.49	77.28
42												
43	0.912	1.46	3.33	1710	-0.300	192	0.321				84.21	84.45
44	0.944	1.34	3.46	1661	-0.337	169	0.318				76.21	77.73
45	0.902	1.42	3.42	1550	-0.246	166	0.322				84.26	84.27
47	1.043	1.59	3.54	1633	-0.284	191	0.321					
48	0.984	1.49	3.36	1601	-0.289	203	0.325				84.67	86.29
49	0.905	1.49	3.31	1730	-0.374	190	0.333				83.93	85.00
51	0.882	1.47	3.28	1459	-0.285	189	0.332				86.40	87.20
52	0.944	1.51	3.23	1782	-0.319	177	0.317				75.68	77.48
53	1.000	1.50	3.40	1599	-0.360	200	0.326					
56	0.979	1.53	3.44	1731	-0.321	201	0.315				84.68	86.15
57	1.005	1.60	3.54	1634	-0.283	189	0.320					
58	0.890	1.38	3.35	1660	-0.310	176	0.325					
59	1.012	1.43	3.34	1787	-0.286	178	0.319				80.94	81.92
60	0.970	1.41	2.87	1700	-0.334	192	0.328					
62	0.956	1.52	3.45	1707	-0.331	209	0.314				84.48	85.76
64	1.002	1.47	3.72	1753	-0.410	200	0.319					
65	0.948	1.62	3.49	1899	-0.373	152	0.323				83.50	84.10
66	0.899	1.47	3.28	1845	-0.279	204	0.314				84.23	84.56
69	0.913	1.44	2.93	1636	-0.300	191	0.323				77.87	72.38
70	0.890	1.50	3.61	1775	-0.285	186	0.328				85.53	81.30
71	0.910	1.41	3.19	1226	-0.300	182	0.336					
73	0.935	1.39	3.21	1330	-0.258	192	0.326					
76	0.925	1.51	3.66	1590	-0.194	172	0.320				84.90	85.52
77	0.860	1.54	3.81	1980	-0.398	191	0.322					
78	0.890	1.41	3.31	1670	-0.310	179	0.327					
81	0.900	1.41	3.18	1700	-0.301	181	0.329					
83	0.945	1.52	3.26	1549	-0.287	182	0.333				83.87	84.09
85	0.928	1.58	3.61	1650	-0.226	180	0.318				84.43	86.16
87	0.946	1.39	3.20	1620	-0.313	174	0.315				76.27	77.38
89	0.996	1.35	3.14	1631	-0.309	173	0.327				84.37	85.37
90	0.906	1.35	3.00	1783	-0.273	190	0.315				84.52	84.81
93	0.941	1.47	3.34	1420	-0.244	183	0.335	2.84	5.01	-31.30	84.50	84.70
95	0.925	1.51	3.43	1524	-0.235	178	0.325				83.00	83.00
97	0.878	1.47	3.16	1428	-0.295	192	0.332				86.10	86.90
98	0.880	1.49	3.28	1452	-0.256	196	0.331				85.90	86.40
99	0.903	1.44	3.12	2036	-0.290	199	0.314				84.16	84.83
Average	0.935	1.46	3.31	1647	-0.302	186	0.323	2.91	5.04	-15.45	81.98	82.37
Std. Dev.	0.0419	0.0693	0.1971	161.09	0.0480	12.15	0.0066	0.2553	0.1473	32.1702	4.0023	5.0616
Coef. of Var.	4.478	4.737	5.952	9.779	15.876	6.551	2.034	8.775	2.926	-208.222	4.882	6.145

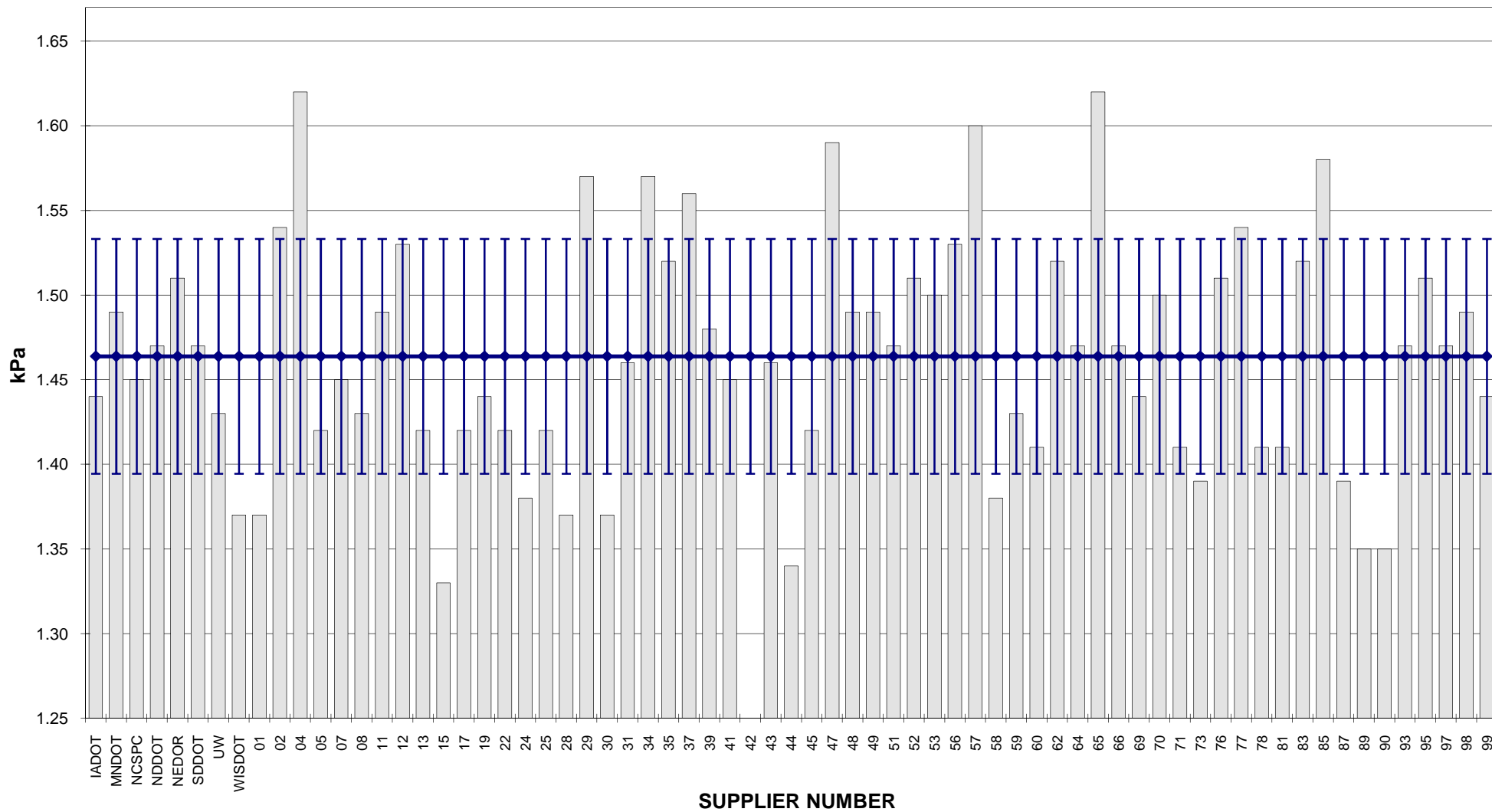
**COMBINED STATE BINDER GROUP ROUND ROBIN 2011-3
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ROTATIONAL VISCOSITY



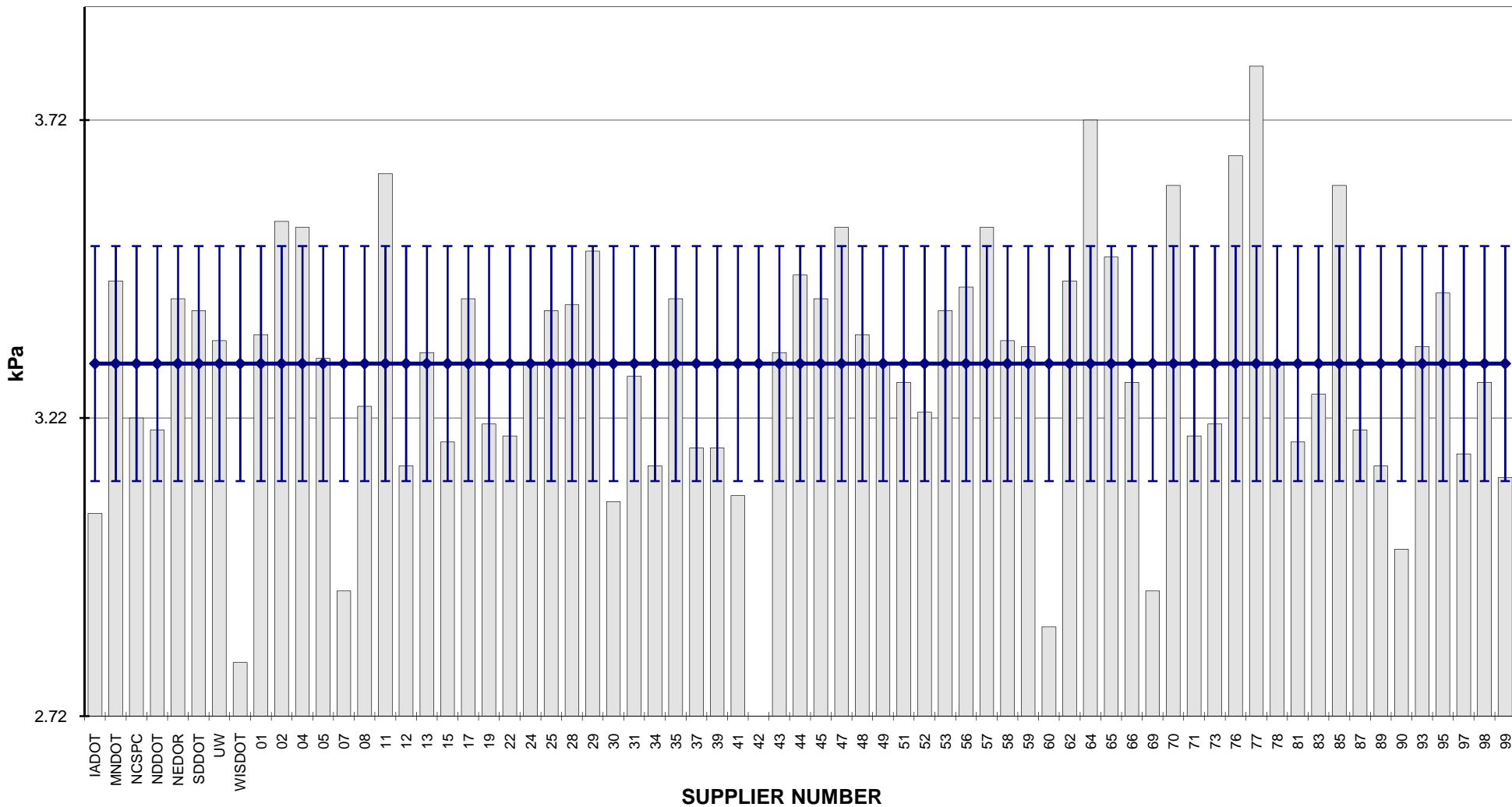
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DSR - ORIGINAL



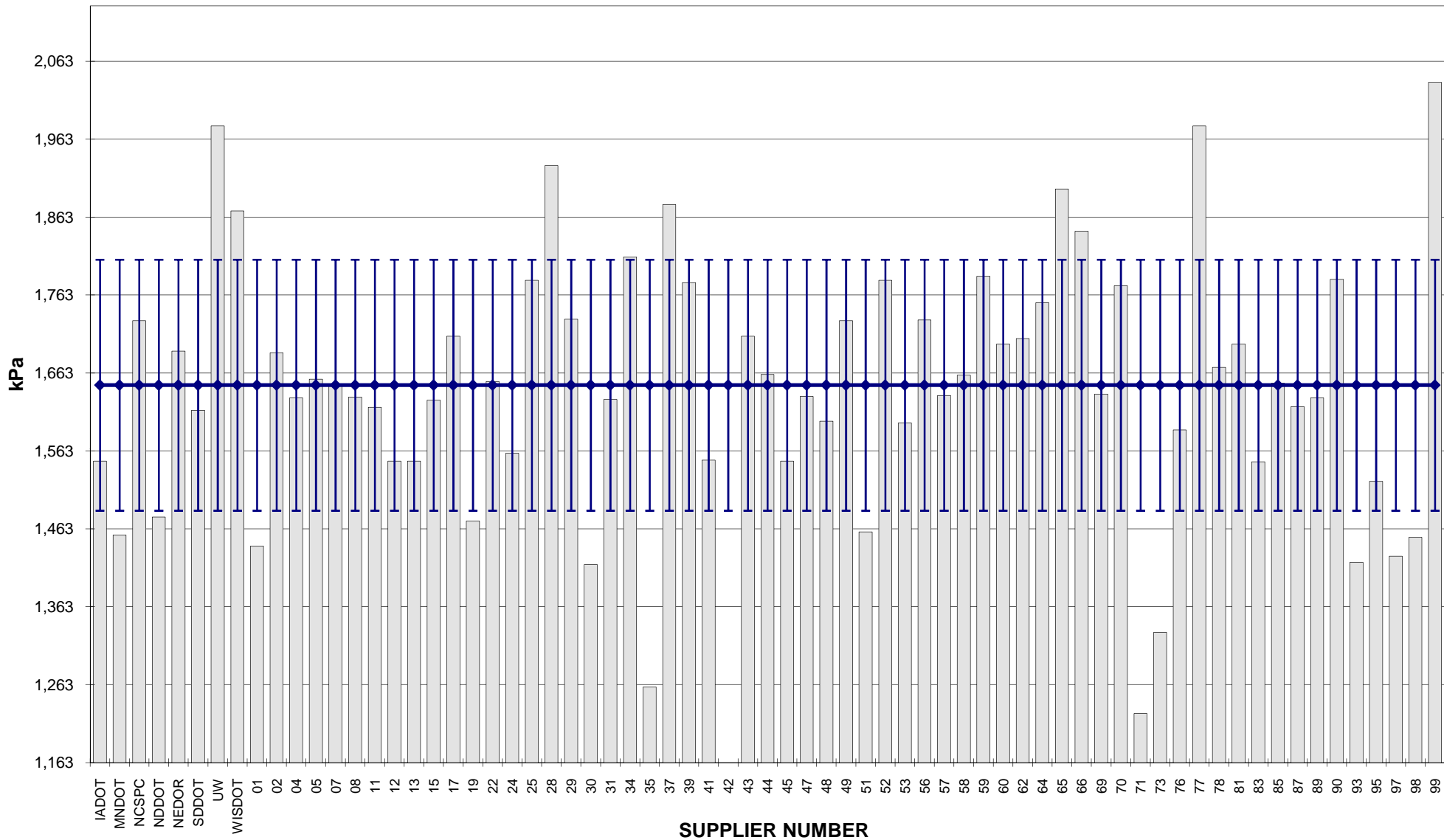
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DSR - RTFO



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DSR - PAV

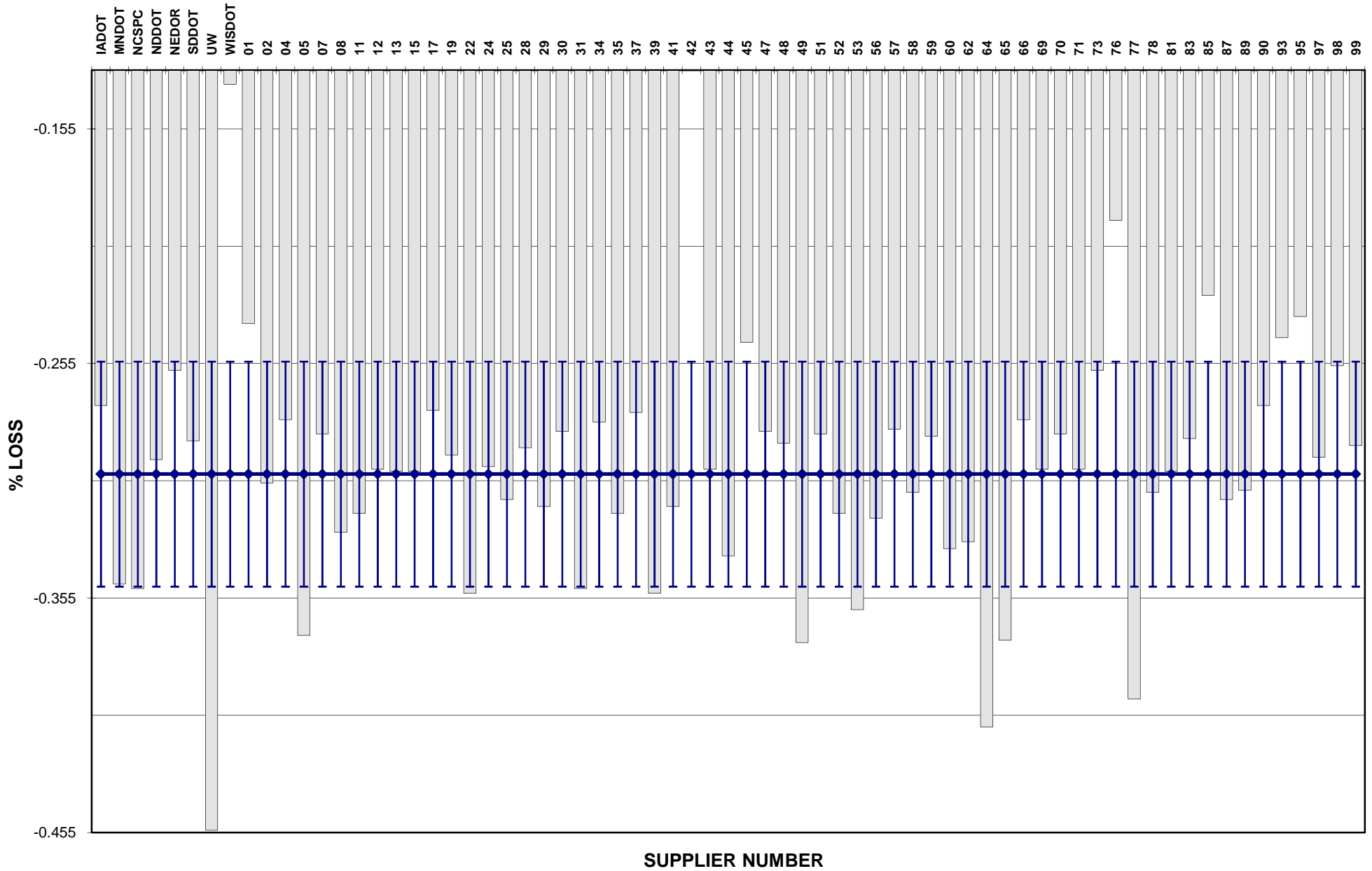


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RTFO MASS LOSS

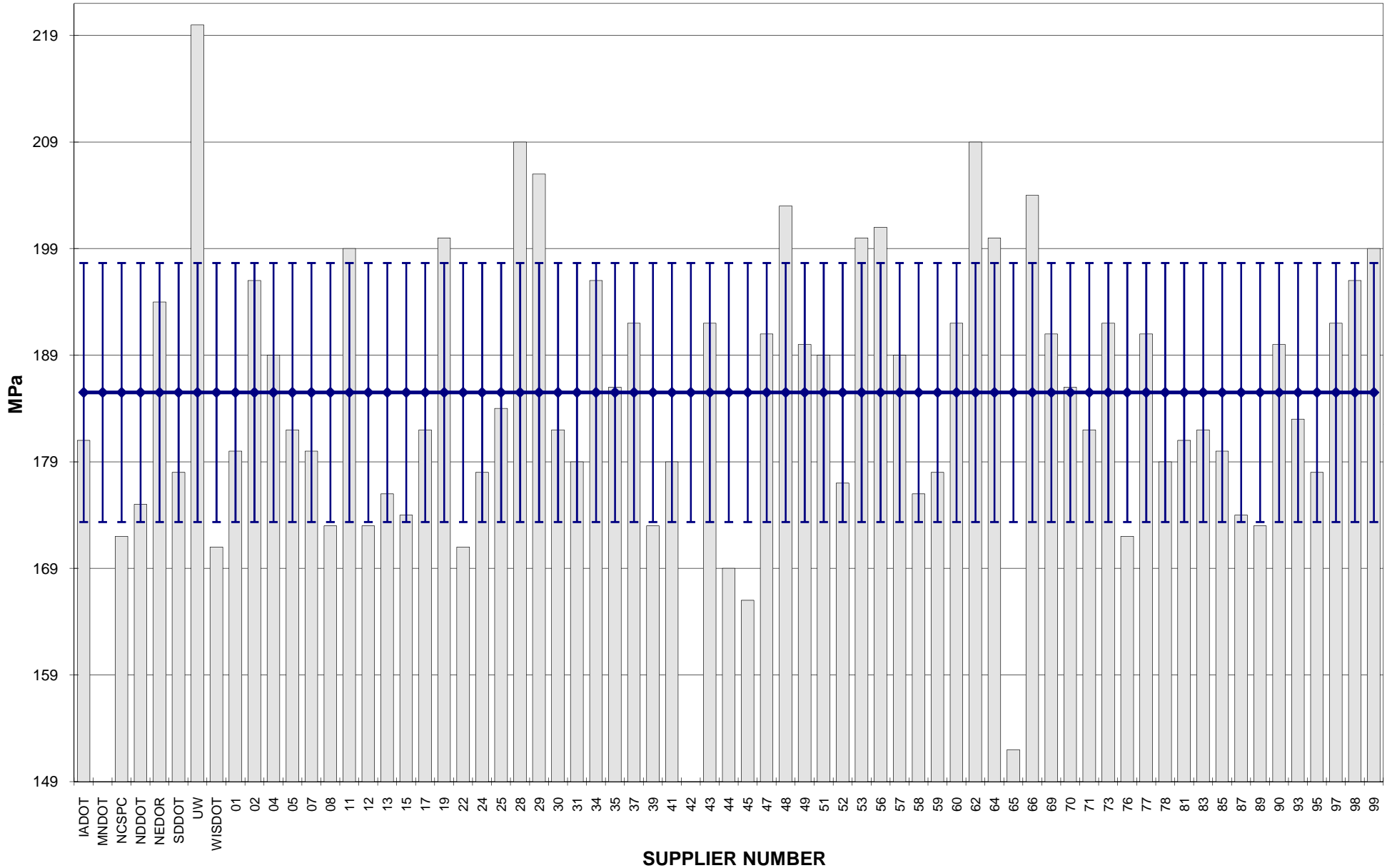


COMBINED STATE BINDER GROUP ROUND ROBIN 2011-3

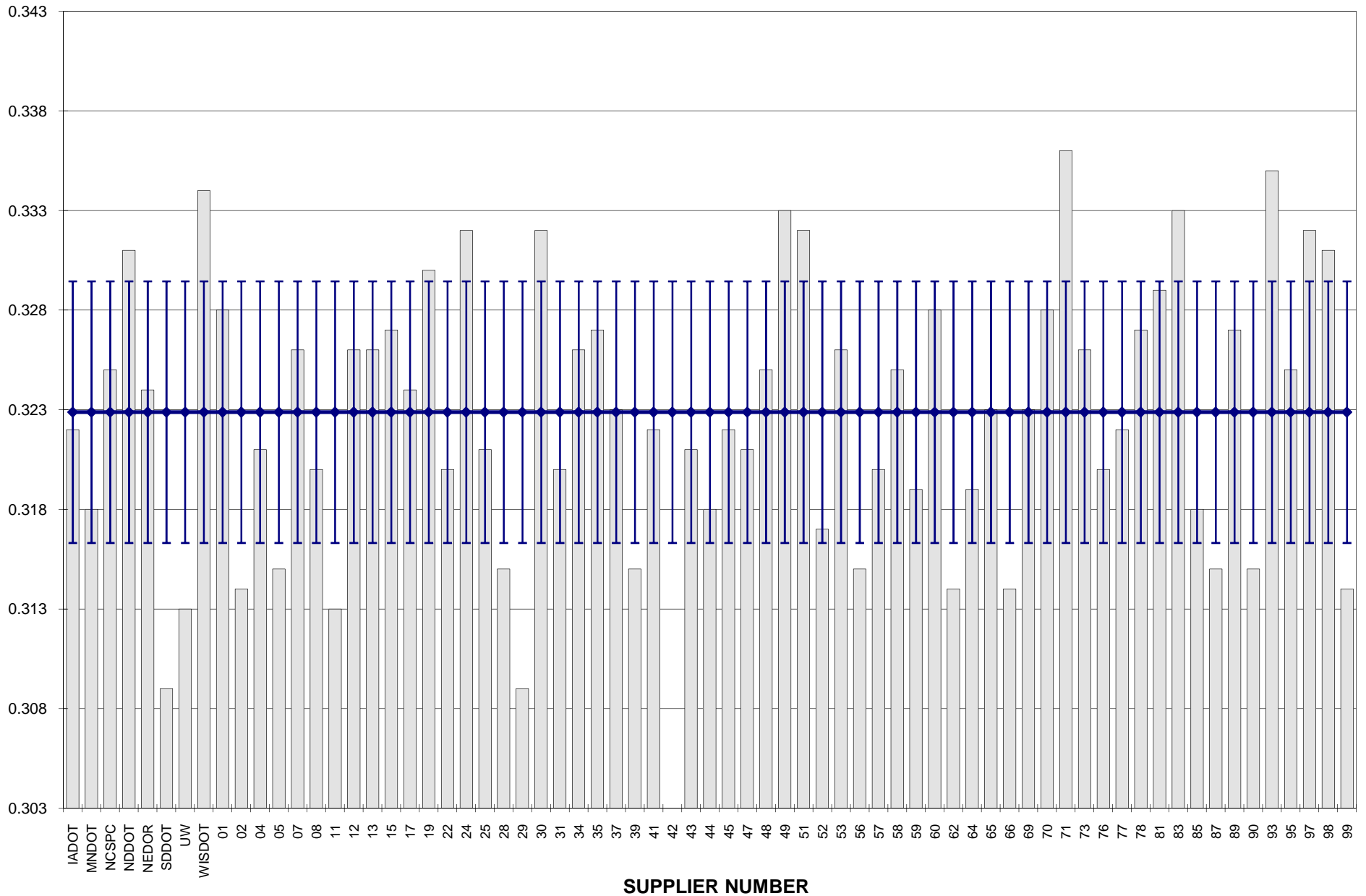
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BBR STIFFNESS



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BBR m-VALUE



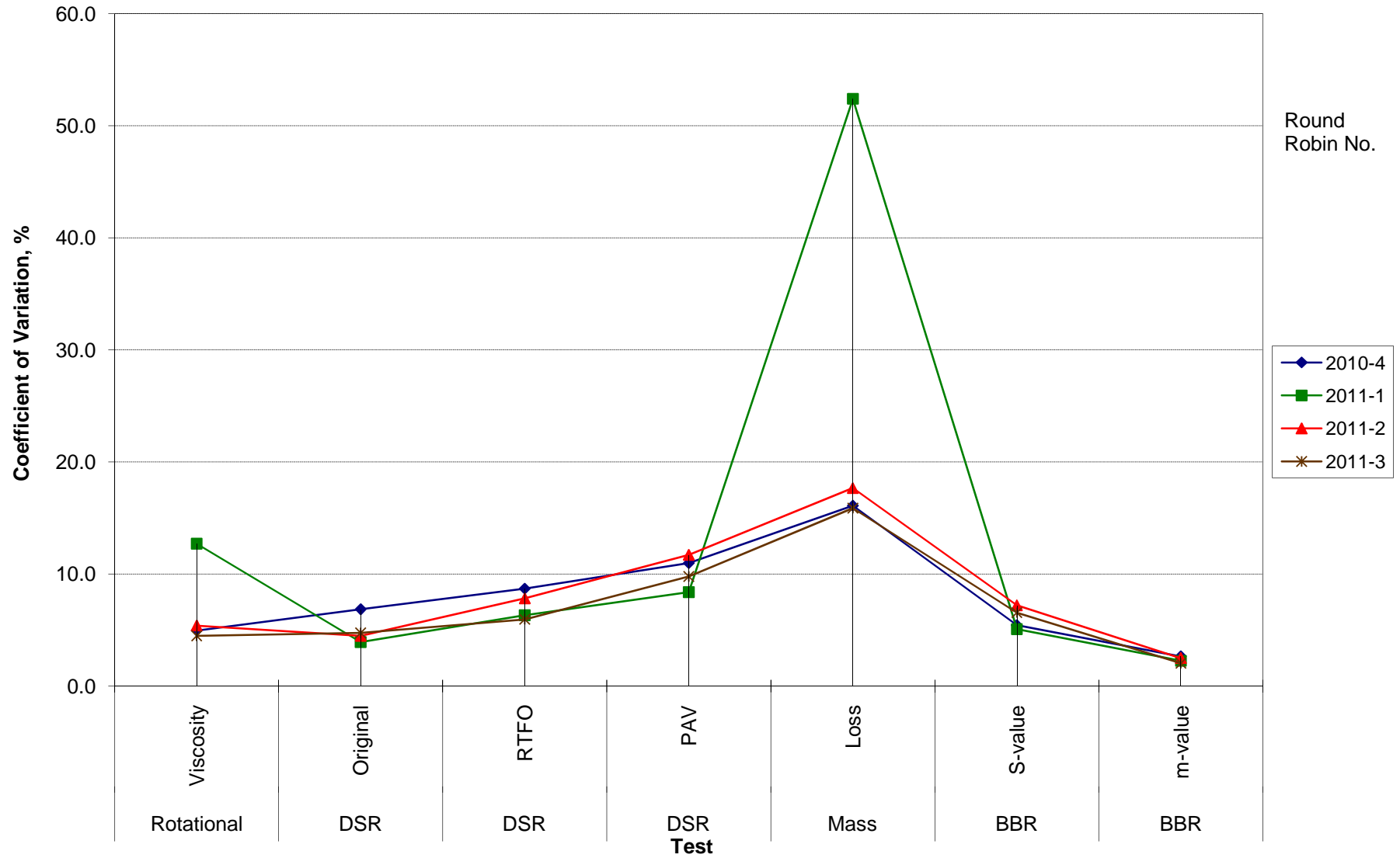
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COEFFICIENT OF VARIATION

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
2010-4	68	4.954	6.857	8.698	10.983	16.107	5.434	2.649	18.298
2011-1	67	12.705	3.920	6.323	8.380	52.400	5.070	2.254	30.453
2011-2	66	5.387	4.474	7.818	11.706	17.671	7.201	2.492	5.946
2011-3	67	4.478	4.737	5.952	9.779	15.876	6.551	2.034	8.775

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COEFFICIENT OF VARIATION



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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	0.936	1.46	3.31	1,649	-0.302	186	0.323
Std. Dev.	0.0420	0.0694	0.1974	161.86	0.0402	12.15	0.0066
Coef. of Var.	4.478	4.737	5.952	9.779	13.197	6.551	2.034