



**Combined State Binder  
Group**

Method of Acceptance for  
Asphalt Binders

Round Robin 2004-3  
Summary A

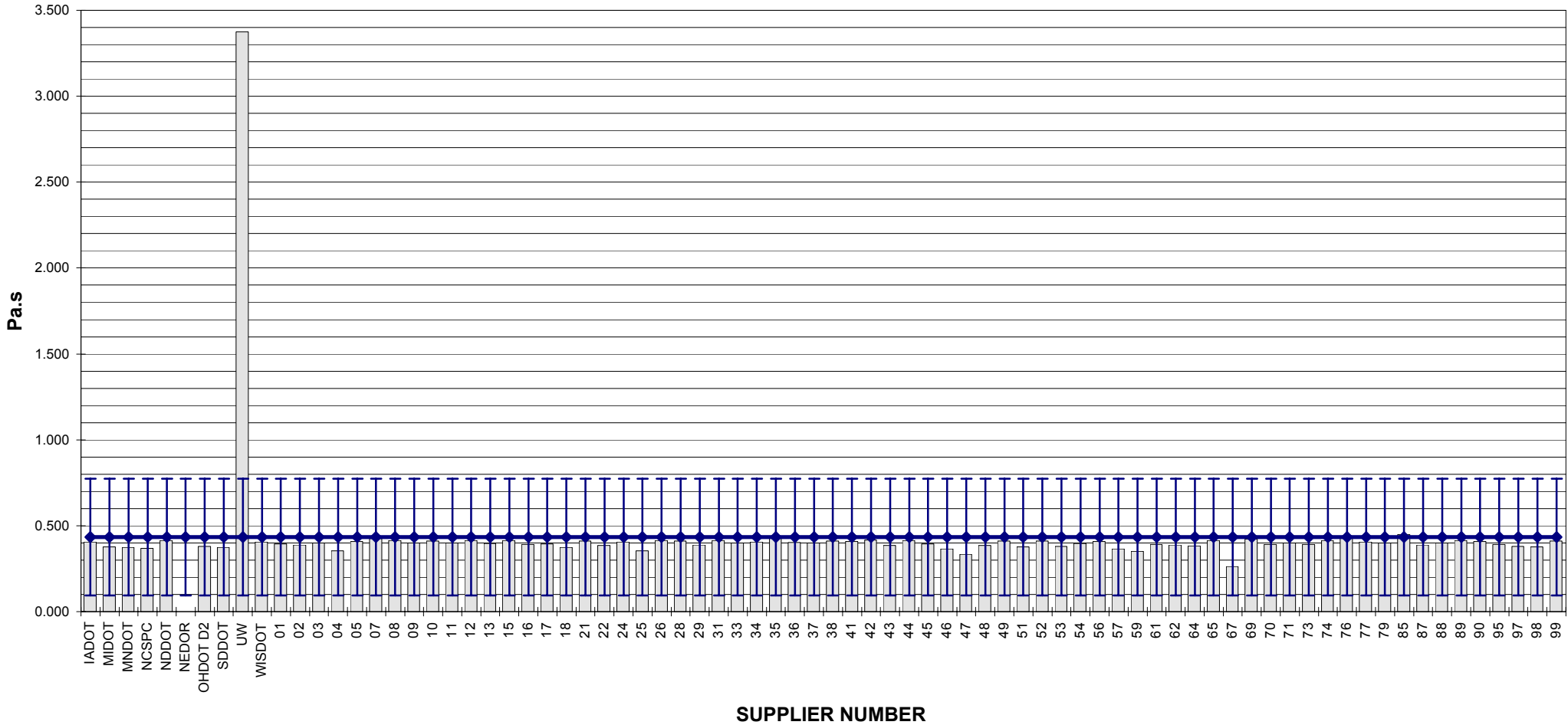
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3  
SUMMARY A  
PG 64-22**

Supplier Number	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	DTT Strain (%) @-12°C	DTT Stress (MPa) @-12°C	CRITICAL CRACK TEMP (°C)
IADOT	0.405	1.35	3.12	4.092	-0.315	216	0.321			
MIDOT	0.378	1.20	2.96	3.886	-0.345	199	0.339			
MNDOT	0.375	1.30	3.43	4.665	-0.347	210	0.309			
NCSPC	0.369	1.19	2.92	4.254	-0.351	195	0.311			
NDDOT	0.413	1.30	2.97	4.153	-0.330	208	0.332			
NEDOR		1.24	3.33	4.311	-0.297	205	0.323			
OHDOT D2	0.380	1.25	3.37	4.446	-0.310	214	0.322			
SDDOT	0.375	1.53	3.22	2.161	-0.373	193	0.326			
UW	3.375	1.21	3.20		-0.053					
WISDOT	0.405	1.19	2.80	2.724	-0.289	205	0.336	1.03	3.31	-23.6
01	0.395	1.22	3.26	3.766	-0.255	208	0.333			
02	0.387	1.21	3.02	3.882	-0.304	212	0.323			
03	0.400	1.33	3.47	4.119	-0.288	214	0.329			
04	0.355	1.25	2.92		-0.298	203	0.318			
05	0.408	1.21	3.23	4.547	-0.254	198	0.320			
07	0.425	1.28	2.86	4.837	-0.337	206	0.320			
08	0.414	1.18	2.99	4.158	-0.336	196	0.315			
09	0.400	1.33	3.26	4.193	-0.280	208	0.330			
10	0.410	1.21	3.10	4.545	-0.251	193	0.318			
11	0.401	1.22	3.10	4.699	-0.322	216	0.324			
12	0.414	1.26	3.50	4.690	-0.410	208	0.320			
13	0.398	1.35	3.22	4.175	-0.285	218	0.326			
15	0.413	1.28	3.33	4.334	-0.357	212	0.319			
16	0.392	1.23	2.94	4.398	-0.188	195	0.330			
17	0.395	1.21	3.23	3.666	-0.225	202	0.331			
18	0.375	1.18	3.15	3.913	-0.344	203	0.334			
21	0.410	1.16	3.14	4.198	-0.328	204	0.320			
22	0.384	1.26	2.90	4.097	-0.449	223	0.313			
24	0.404	1.33	3.20	4.986	-0.291	223	0.323	0.51	3.62	-22.7
25	0.354	1.24	3.18	3.264	-0.308	200	0.331			
26	0.414	1.24	2.77	3.654	-0.310	210	0.328			
28	0.410	1.17	3.32	4.077	-0.330	198	0.324			
29	0.389	1.29	3.05	4.022	-0.366	205	0.310			
31	0.415	1.23	3.22	4.537	-0.347	194	0.318			
33	0.400	1.27	3.39	4.558	-0.271	225	0.317			
34	0.404	1.23	3.30	4.467	-0.318	217	0.319			
35	0.427	1.70	4.18		-0.331					
36	0.402	1.16	2.98	3.872	-0.314	211	0.325			
37	0.400	1.23	2.98	4.208	-0.290	199	0.312			
38	0.412	1.16	3.19	4.165	-0.252	197	0.318			
41	0.407	1.19	2.94	4.809	-0.334	202	0.318			
42	0.416	1.28	3.25	3.995	-0.386	181	0.342			
43	0.384	1.33	3.24	4.027	-0.315	206	0.331			
44	0.414	1.19	3.01	3.840	-0.243	192	0.319			
45	0.395	1.19	3.20	3.697	-0.269	202	0.333			
46	0.365	1.24	3.42	3.687	-0.306	204	0.336			
47	0.335	1.25	3.20	4.116	-0.378	209	0.320			
48	0.384	1.28	3.36	4.303	-0.325	208	0.322			
49	0.410	1.37	3.37	3.837	-0.278	172	0.344			
51	0.378	1.24	3.09	4.720	-0.370	222	0.327	1.08	3.42	
52	0.412	1.13	2.94	4.527	-0.321	202	0.318			
53	0.381	1.41	3.29	4.824	-0.370	209	0.315			
54	0.398	1.33	3.00	4.181	-0.292	208	0.328			
56	0.408	1.14	3.15	3.959	-0.319	205	0.324			
57	0.365	1.19	2.89		-0.300	207	0.324	3.76	1.28	
59	0.351	1.22	3.09	3.629	-0.286	190	0.330			
61	0.392	1.35	3.44	4.172	-0.372	214	0.302			
62	0.387	1.19	3.03	4.517	-0.352	219	0.321			
64	0.383	1.37	3.42	4.656	-0.392	200	0.318			
65	0.414	1.16	3.04	4.348	-0.256	194	0.324			
67	0.263	1.24	3.86	4.461	-0.288	212	0.326			
69	0.423	1.22	2.95	4.877	-0.320	209	0.323	1.34	4.14	-23.2
70	0.390	1.24	3.06	3.871	-0.345	192	0.321			
71	0.400	1.32	3.48	3.733	0.050	206	0.323			
73	0.390	1.38	3.44	3.686	0.020	197	0.313			
74	0.413	1.13	3.13	4.121	-0.362	196	0.322			
76	0.430	1.34	3.32	4.023	-0.378	190	0.336			
77	0.405	1.20	3.24	4.150	-0.351	219	0.326			
79	0.400	1.28	3.47	4.276	-0.164	209	0.326			
85	0.448	1.38	3.47	3.700	-0.370	200	0.335			
87	0.388	1.22	3.17	4.321	-0.303	204	0.320			
88	0.400	1.35	2.82	4.076	-0.286	200	0.328			
89	0.413	1.31	3.43	4.298	-0.348	208	0.315			
90	0.409	1.15	3.09	4.030	-0.336	202	0.328			
95	0.390	1.26	3.09	4.232	-0.343	203	0.329			
97	0.380	1.25	3.48	4.854	-0.399	219	0.326	0.91	3.25	
98	0.378	1.24	3.21	4.326	-0.390	222	0.330	0.81	2.93	
99	0.412	1.23	3.12	4.037	-0.359	197	0.326			
Average	0.4337	1.2585	3.1912	4.157.23	-0.3075	204.92	0.3239	1.348	3.14	-23.2
Std. Dev.	0.3405	0.0888	0.2321	459.41	0.0799	9.83	0.0077	1.094	0.90	0.451
Coef. of Var.	78.514	7.056	7.273	11.051	25.984	4.796	2.389	81.097	28.68	-1.95

COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3  
SUMMARY A

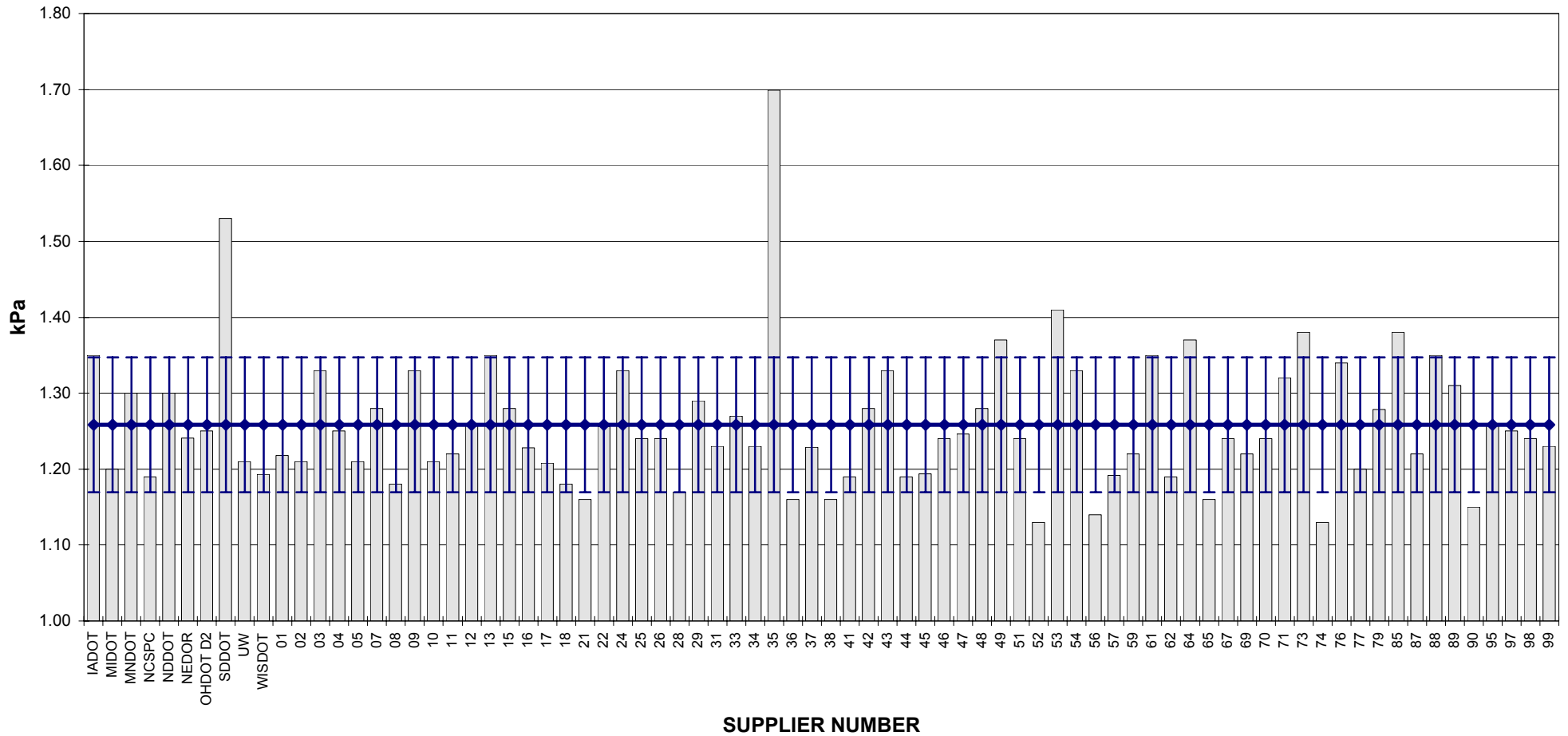
PG 64-22

ROTATIONAL VISCOSITY



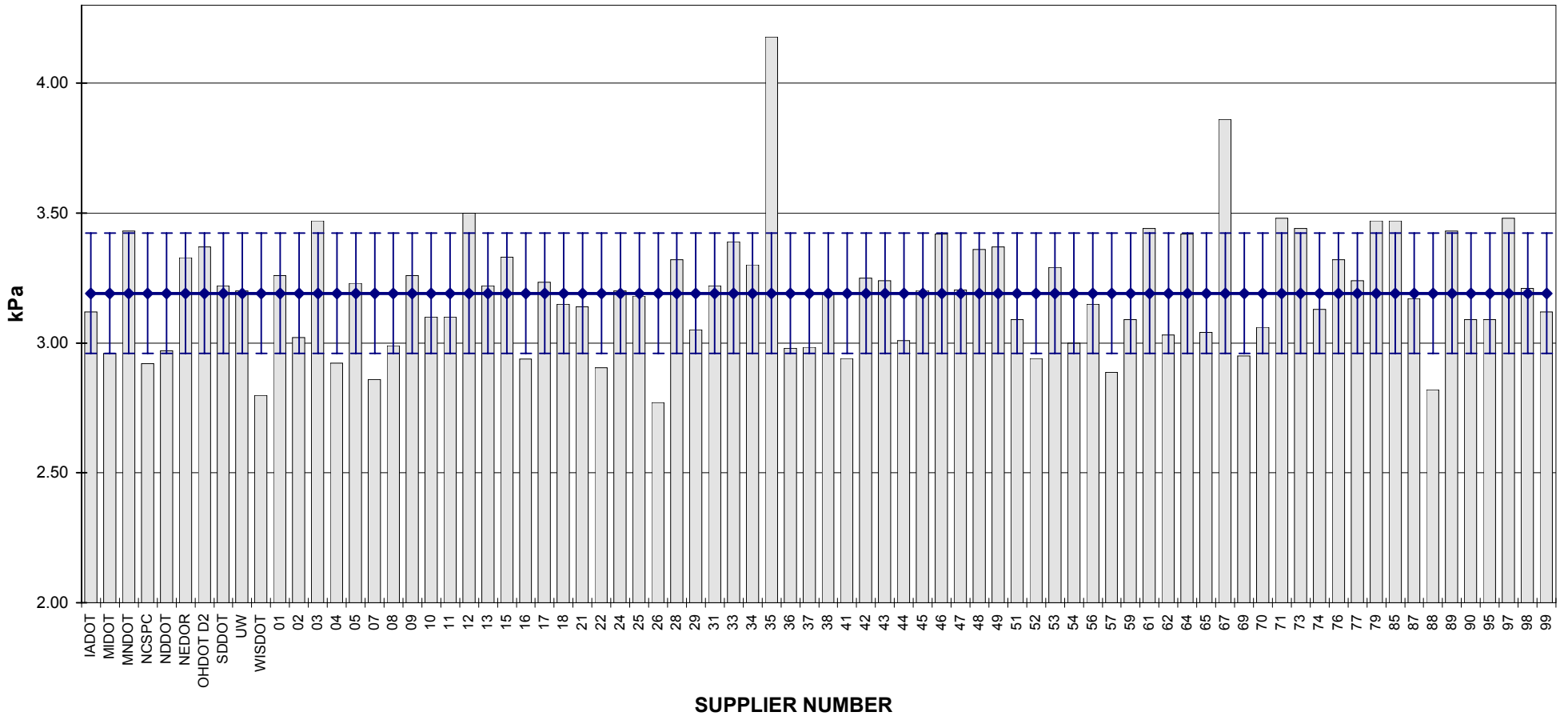
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3  
SUMMARY A  
PG 64-22**

**DSR - ORIGINAL**

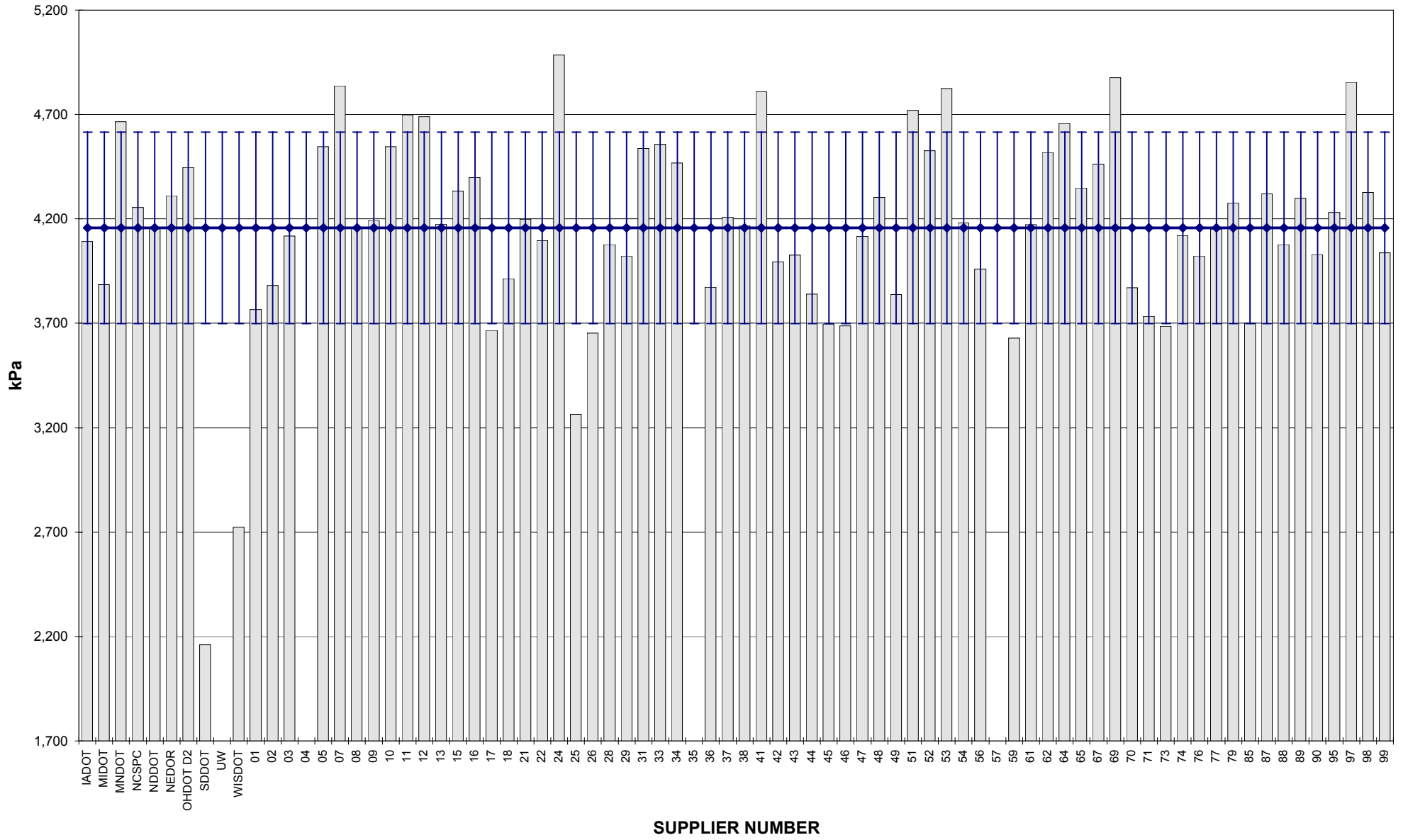


**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3  
SUMMARY A  
PG 64-22**

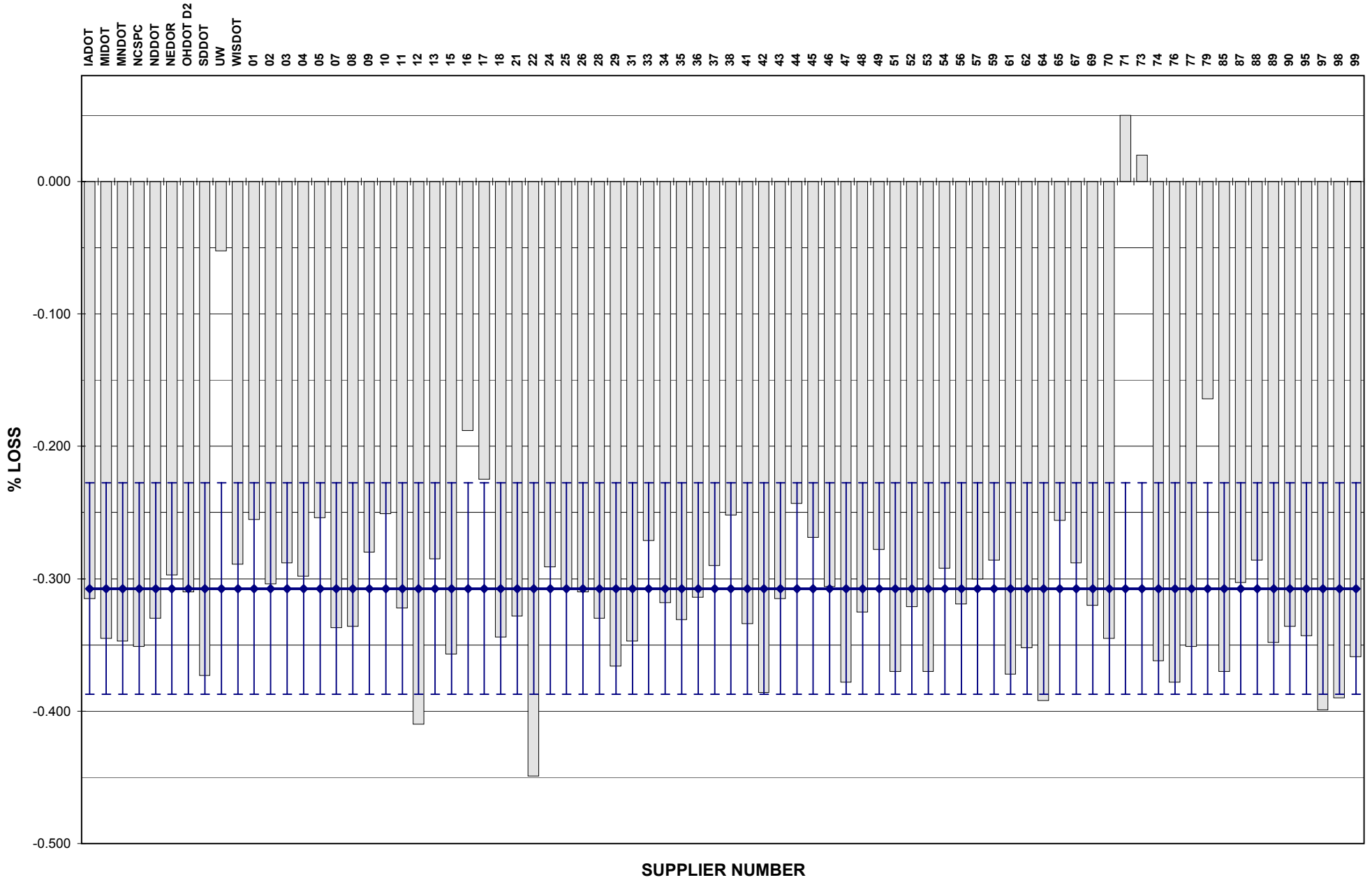
**DSR - RTFO**



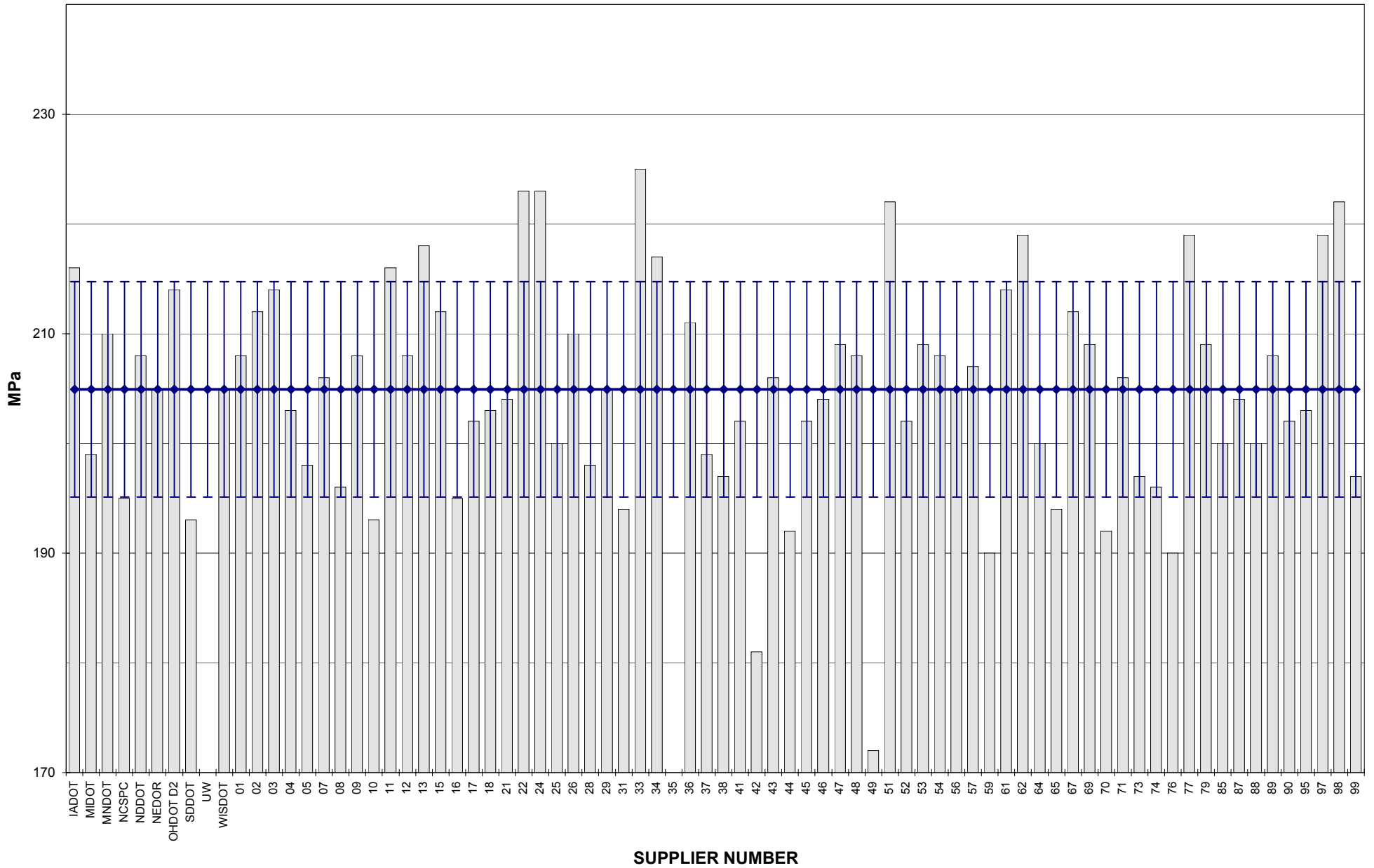
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3**  
**SUMMARY A**  
**PG 64-22**  
**DSR - PAV**



**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3**  
**SUMMARY A**  
**PG 64-22**  
**RTFO MASS LOSS**

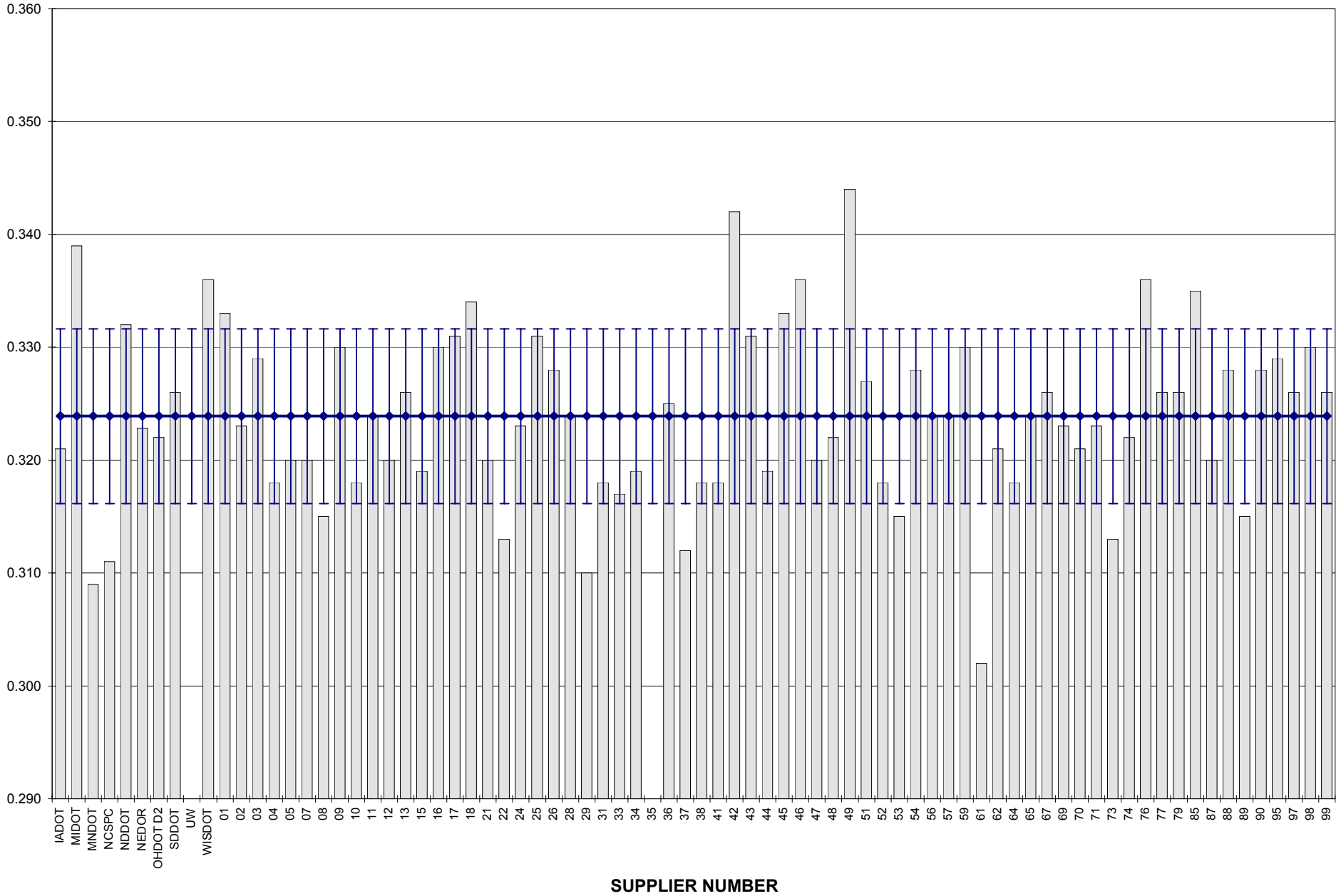


**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3**  
**SUMMARY A**  
**PG 64-22**  
**BBR STIFFNESS**





**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3**  
**SUMMARY A**  
**PG 64-22**  
**BBR m-VALUE**



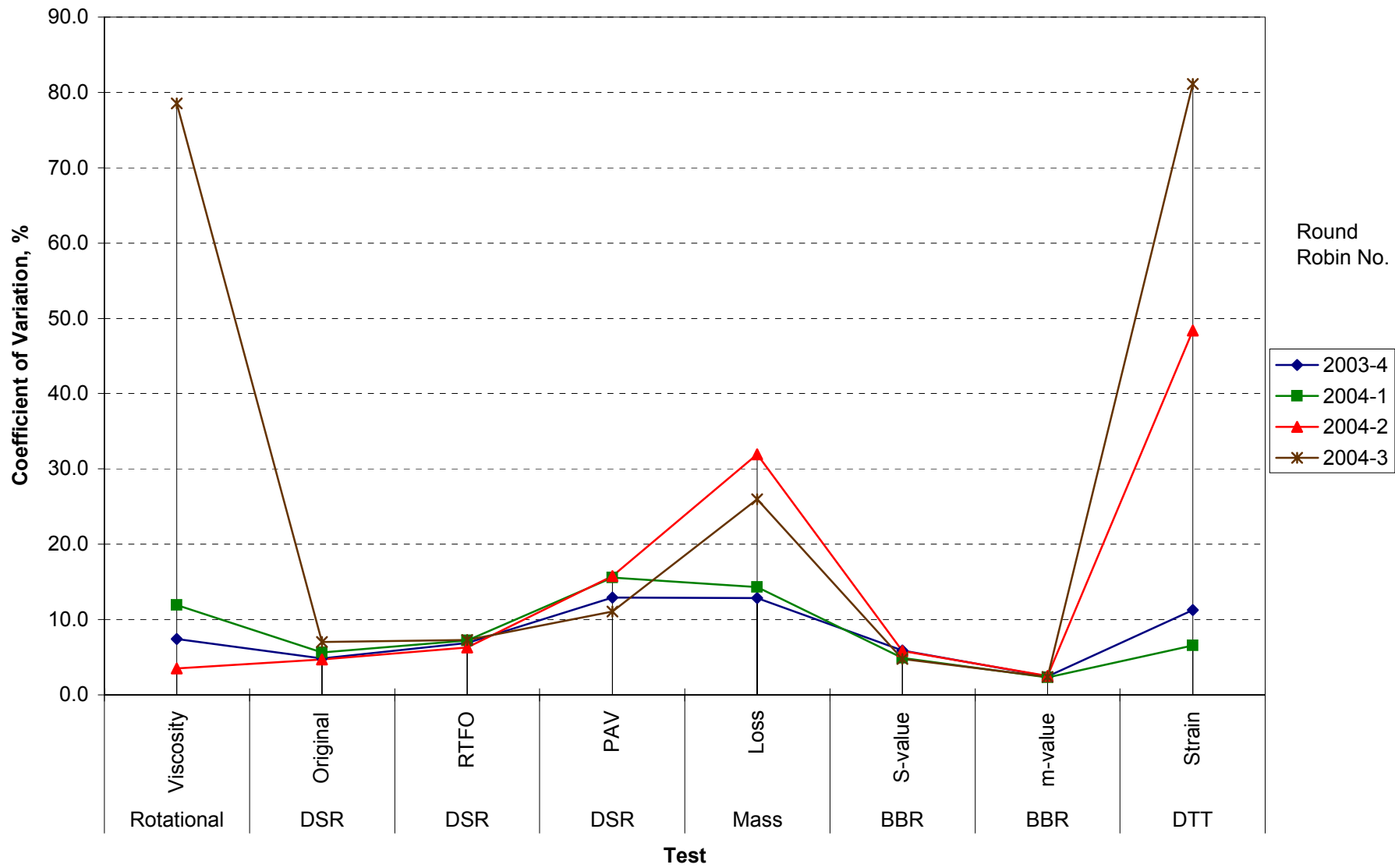
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3  
SUMMARY A**

**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
2003-4	78	7.395	4.807	6.881	12.916	12.861	5.926	2.485	11.264
2004-1	76	11.950	5.6202	7.2149	15.576	14.307	4.9252	2.3201	6.577
2004-2	78	3.511	4.7201	6.292	15.755	31.939	5.8572	2.5138	48.402
2004-3	78	78.514	7.056	7.273	11.051	25.984	4.796	2.389	81.097

**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-3  
SUMMARY A**

**COEFFICIENT OF VARIATION**



**STATISTICS WITH OUTLIERS REMOVED:**

	<b>Rotational Viscosity (Pa.s) @135°C</b>	<b>DSR Original (kPa) @64°C</b>	<b>DSR RTFO (kPa) @64°C</b>	<b>DSR PAV (kPa) @25°C</b>	<b>Mass Loss (%) @163°C</b>	<b>BBR S-value (MPa) @-12°C</b>	<b>BBR m-value @-12°C</b>
<b>Average</b>	0.3976	1.2491	3.1694	4,204.86	-0.3221	205.36	0.3239
<b>Std. Dev.</b>	0.0184	0.0666	0.1895	360.06	0.0461	9.11	0.0077
<b>Coef. of Var.</b>	4.617	5.332	5.978	8.563	14.305	4.438	2.389