

# **Combined State Binder Group**

**Method of Acceptance for  
Asphalt Binders**

**Round Robin 2005-3  
Summary A**

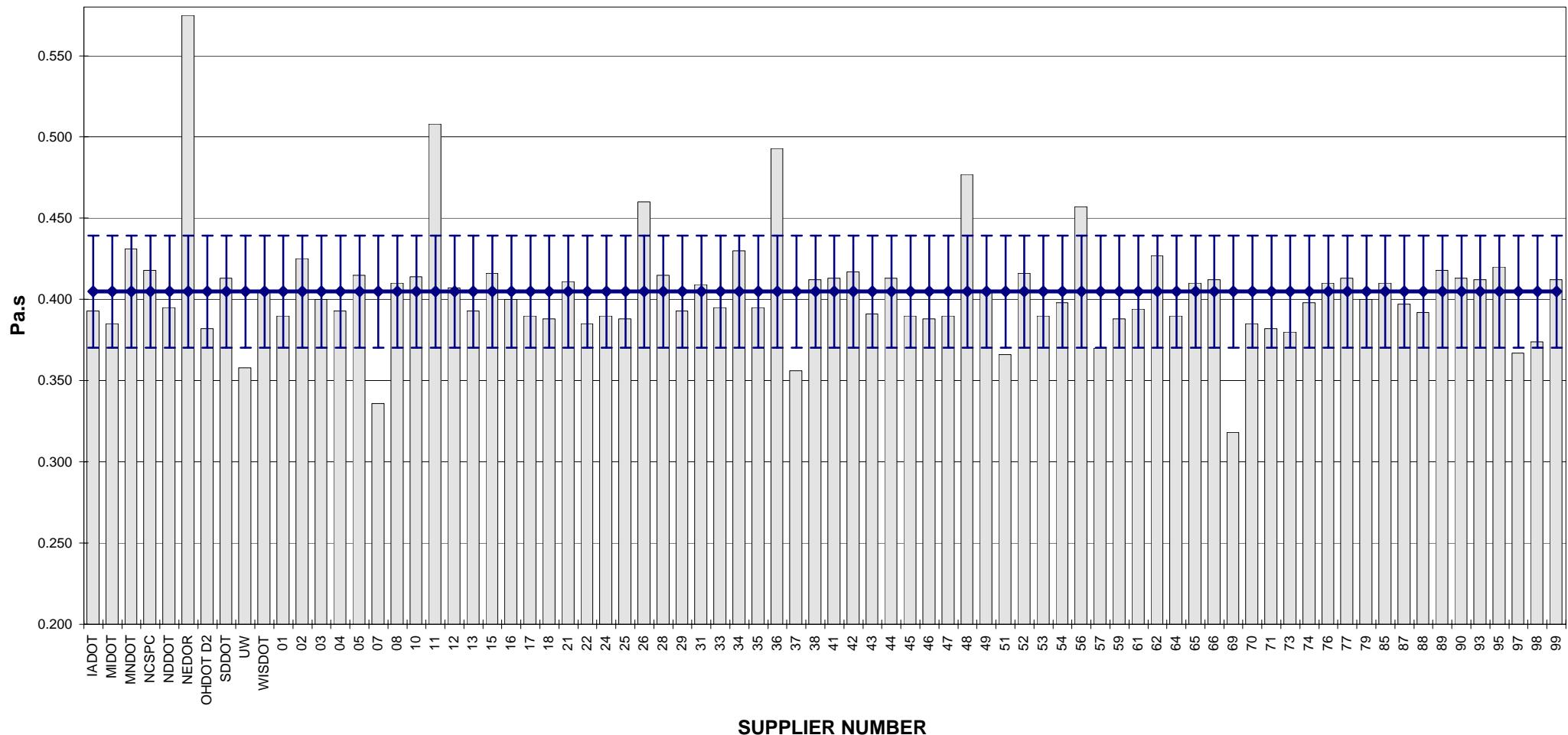
**COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3**  
**SUMMARY A**  
**PG 64-22**

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	0.393	1.37	2.81	3,955	-0.051	222	0.321			
MIDOT	0.385	1.22	2.84	3,364	-0.081	201	0.337			
MNDOT	0.431	1.21	3.10	4,799	-0.080	203	0.333			
NCSPC	0.418	1.23	2.73	3,168	-0.098	212	0.308			
NDDOT	0.395	1.34	3.01	4,265	-0.093	223	0.325			
NEDOR	0.575	1.21	3.32	5,445	-0.061	209	0.316			
OHDOT D2	0.382	1.48	3.60	5,101	-0.066	235	0.322			
SDDOT	0.413	1.59	4.31	5,101	-0.036	226	0.303			
UW	0.358	1.13	3.35	4,195	-0.091	288	0.276			
WISDOT	0.405	1.25	2.79	4,824	-0.057					
01	0.390	1.11	2.83	5,238	-0.043	217	0.333			
02	0.425	1.16	2.74	4,448	-0.091	203	0.329			
03	0.400	1.31	3.09	3,981	-0.099	208	0.336			
04	0.393	1.34	2.77	4,368	-0.069	212	0.320			
05	0.415	1.20	2.92	4,329	-0.048	190	0.320			
07	0.336	1.34	2.90	5,154	-0.051	220	0.317			
08	0.410	1.25	2.77	4,405	-0.026	197	0.324			
10	0.414	1.28	2.96	4,278	-0.030	189	0.322			
11	0.508	1.11	3.05	4,164	-0.113	202	0.330			
12	0.407	1.30	3.01	4,894	-0.144	220	0.318			
13	0.393	1.34	3.16	4,064	-0.091	227	0.327			
15	0.416	1.25	3.07	4,439	-0.108	222	0.321			
16	0.400	1.16	2.91	4,019	-0.297	205	0.331			
17	0.390	1.14	2.78	5,119	-0.012	219	0.332			
18	0.388	1.30	3.11	3,607	-0.087	208	0.336			
21	0.411	1.23	2.89	3,695	-0.056	207	0.326			
22	0.385	1.20	2.76	3,185	-0.119	214	0.333			
24	0.390	1.30	3.22	4,192	-0.070	209	0.342	1.39	3.78	-22.9
25	0.388	1.25	3.30	4,813	-0.109	209	0.322			
26	0.460	1.11	2.89	4,811	-0.111	182	0.327			
28	0.415	1.20	3.02	3,846	-0.080	211	0.325			
29	0.393	1.33	2.90	5,302	-0.126	205	0.324			
31	0.409	1.20	2.89	3,826	-0.032	194	0.326			
33	0.395	1.32	3.30	4,246	-0.089	223	0.332			
34	0.430	1.18	2.66	4,465	-0.080	196	0.328			
35	0.395	1.25	3.23	4,285	-0.071	223	0.320			
36	0.493	1.16	2.59	4,096	-0.077	196	0.328			
37	0.356	1.22	2.75	4,910	-0.056	230	0.319	1.61	4.32	-23.6
38	0.412	1.18	2.94	4,059	-0.055	204	0.323			
41	0.413	1.20	2.94	3,822	-0.048	189	0.320			
42	0.417	1.18	2.77	3,994	-0.260	201	0.333			
43	0.391	1.29	2.93	4,242	-0.056	213	0.338			
44	0.413	1.22	3.01	4,029	-0.020	198	0.324			
45	0.390	1.13	2.93	5,361	-0.040	225	0.327			
46	0.388	1.24	2.93	4,683	-0.041	208	0.322			
47	0.390	1.35	2.83	4,269	-0.089	207	0.323			
48	0.477	1.19	2.60	4,699	-0.073	209	0.327			
49	0.405	1.28	3.96	3,752	-0.143	196	0.337			
51	0.366	1.18	2.84	4,822	-0.091	220	0.333			
52	0.416	1.25	2.86	4,529	-0.046	194	0.321			
53	0.390	1.38	2.94	4,646	-0.089	205	0.325			
54	0.398	1.26	3.03	4,161	-0.077	218	0.330			
56	0.457	1.18	2.75	4,045	-0.066	209	0.329			
57	0.370	1.27	2.89	4,313	-0.076	210	0.321	1.25	3.51	
59	0.388	1.26	2.95	4,797	-0.085	212	0.325			
61	0.394	1.36	3.31	4,235	-0.003	206	0.329			
62	0.427	1.23	2.62	4,327	-0.066	205	0.323			
64	0.390	1.42	3.08	4,312	-0.100	220	0.313			
65	0.410	1.22	2.98	3,917	-0.034	180	0.312			
66	0.412	1.22	2.77	3,687	-0.075	204	0.324			
69	0.318	1.39	2.95	5,040	-0.064	207	0.318	1.10	3.66	-22.7
70	0.385	1.19	2.87	3,630	-0.092	201	0.328			
71	0.382	1.25	3.17	3,431	-0.036	195	0.336			
73	0.380	1.27	3.17	3,431	-0.048	195	0.344			
74	0.398	1.37	2.98	4,598	-0.086	223	0.332			
76	0.410	1.20	3.18	3,853	-0.093	199	0.315			
77	0.413	1.28	3.17	4,013	-0.069	213	0.314			
79	0.400	1.41	3.24	3,656	-0.088	213	0.316			
85	0.410	1.28	2.96	4,177	-0.116	208	0.320			
87	0.397	1.18	3.00	3,790	-0.075	201	0.325			
88	0.392	1.23	2.98	3,968	-0.068	197	0.336			
89	0.418	1.28	3.13	4,406	-0.091	216	0.327			
90	0.413	1.24	2.71	3,621	-0.080	205	0.324			
93	0.412	1.22	2.80	4,011	-0.059	202	0.328			
95	0.420	1.32	3.47	3,698	-0.026	207	0.343			
97	0.367	1.23	2.85	4,949	-0.069	222	0.327			
98	0.374	1.27	2.87	4,917	-0.063	230	0.321			
99	0.412	1.27	2.81	3,633	-0.083	208	0.324			
Average	0.405	1.256	2.99	4,281	-0.077	210	0.325	1.34	3.82	-23.07
Std. Dev.	0.0345	0.0856	0.2744	536.53	0.0434	14.47	0.0095	0.217	0.35	
Coef. of Var.	8.518	6.818	9.166	12.533	56.096	6.908	2.933	16.213	9.24	

COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3  
SUMMARY A

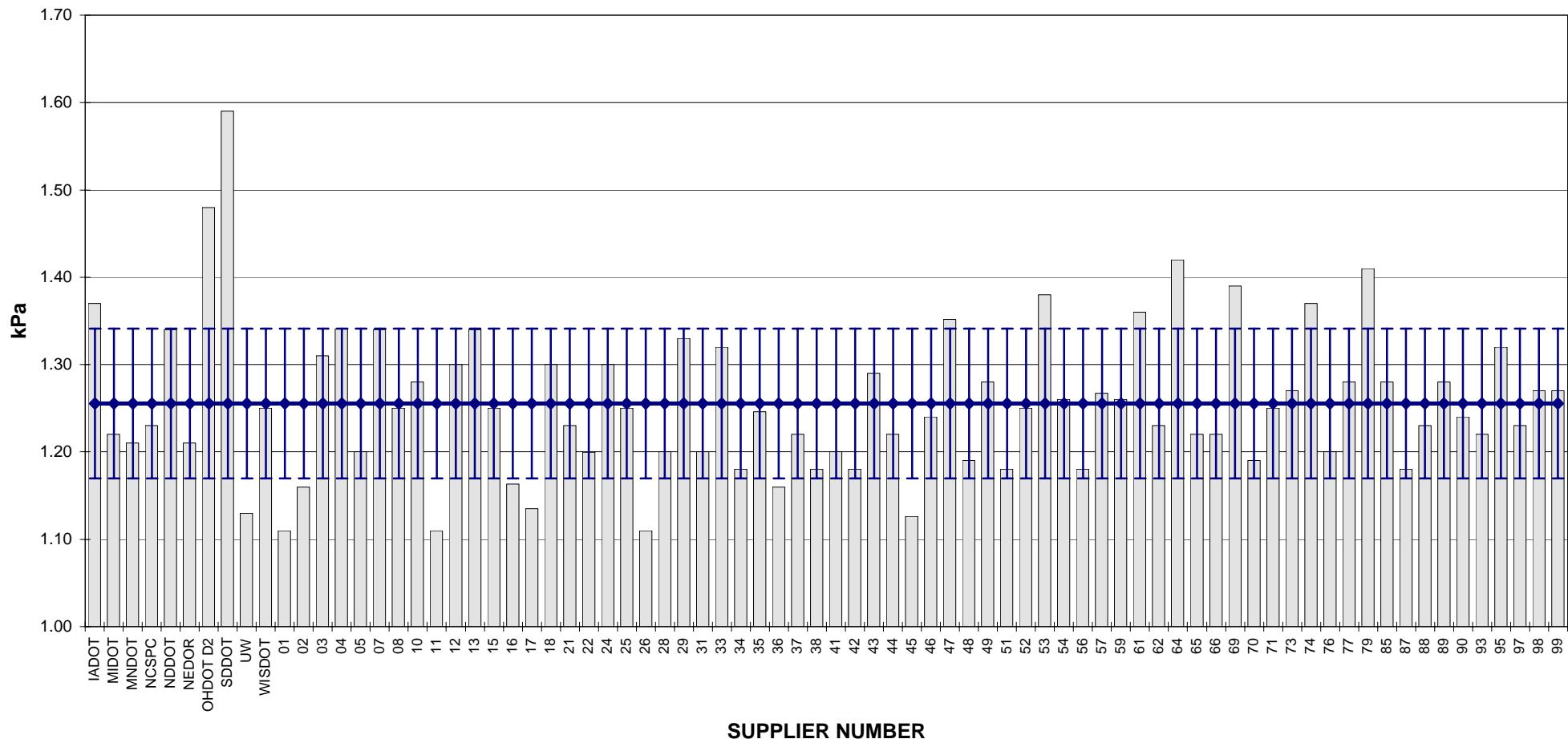
PG 64-22

ROTATIONAL VISCOSITY



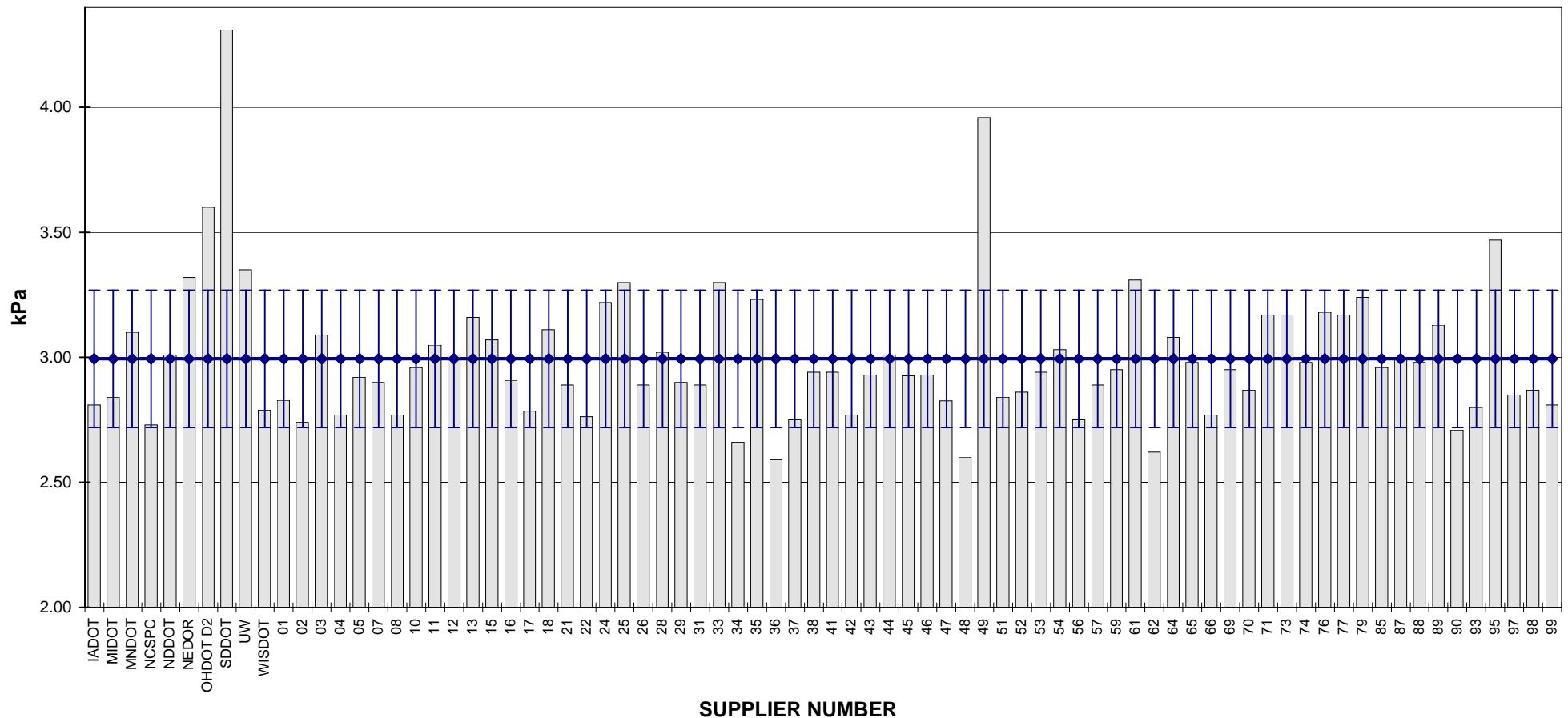
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DSR - ORIGINAL

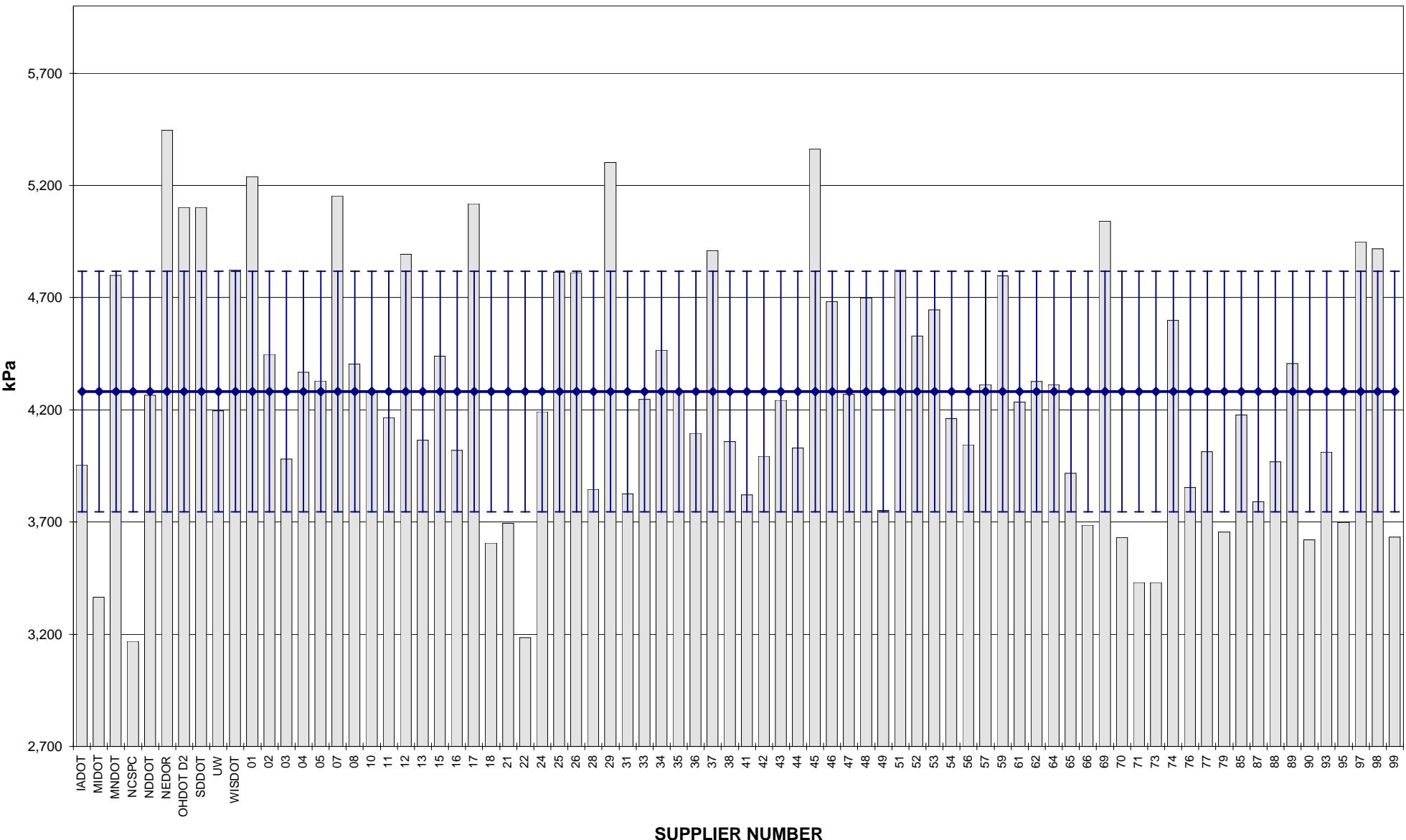


COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3  
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DSR - RTFO



**COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3**  
**SUMMARY A**  
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**DSR - PAV**

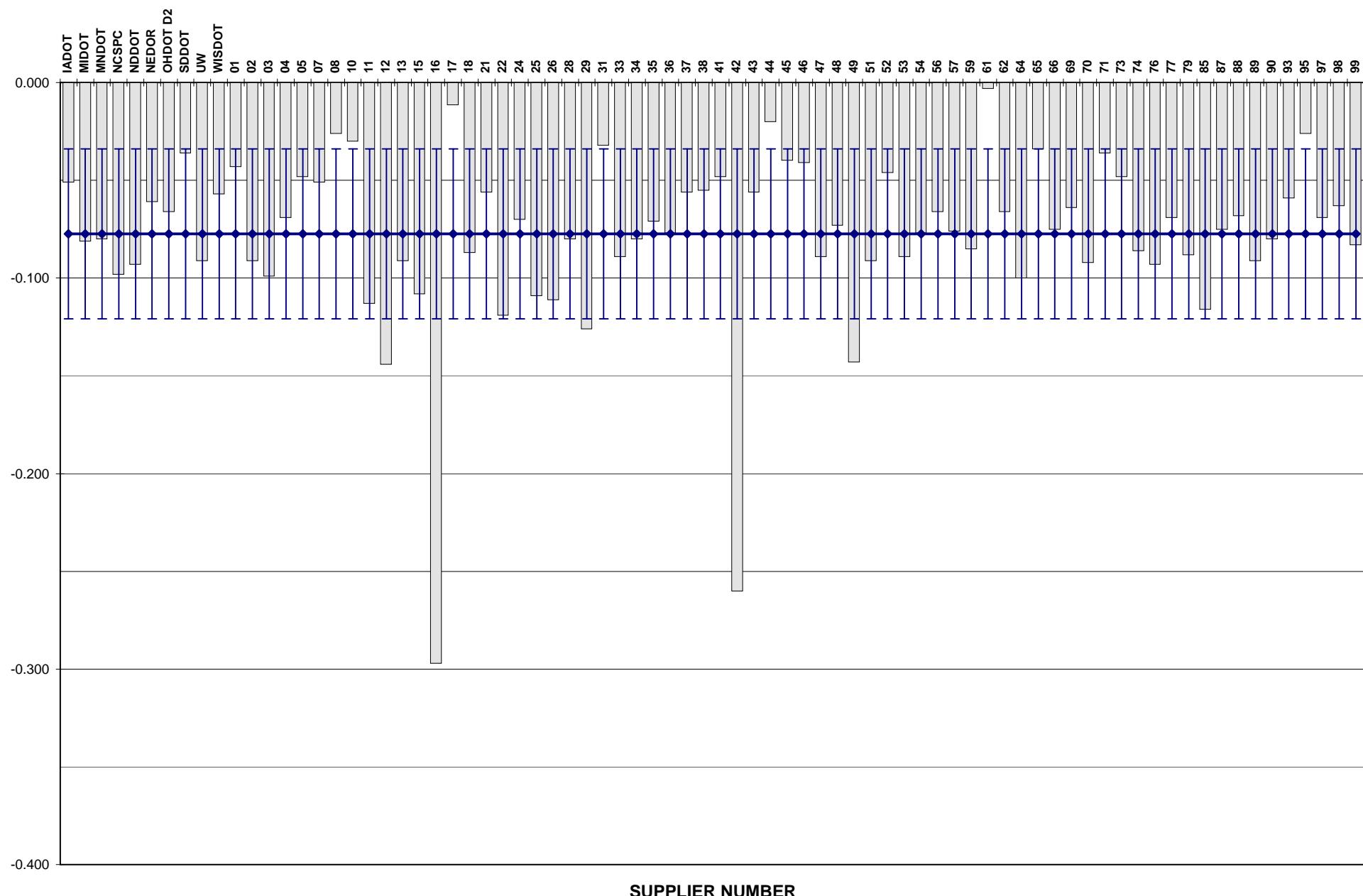


COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3

SUMMARY A

PG 64-22

**RTFO MASS LOSS**

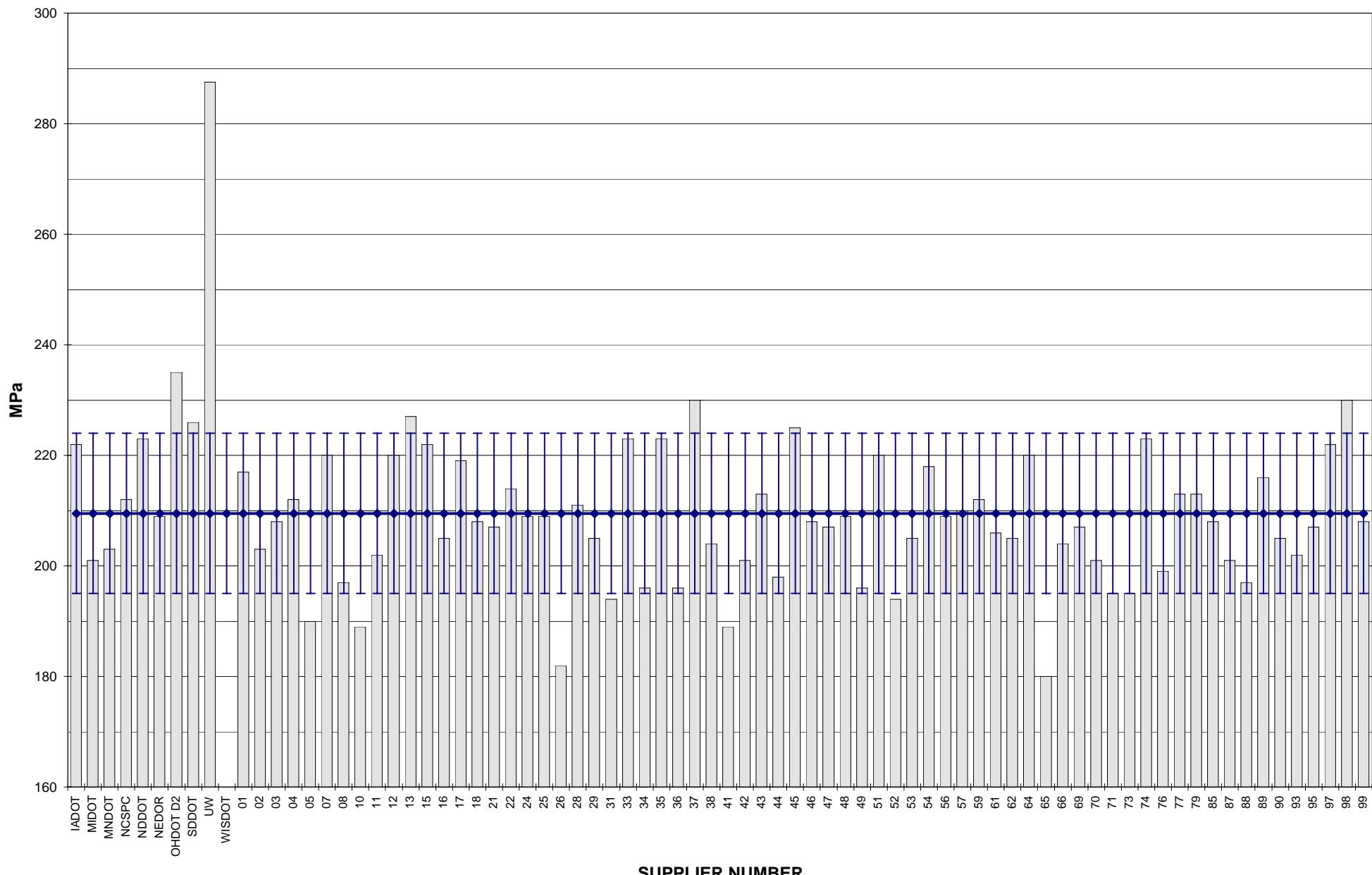


COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3

SUMMARY A

PG 64-22

**BBR STIFFNESS**

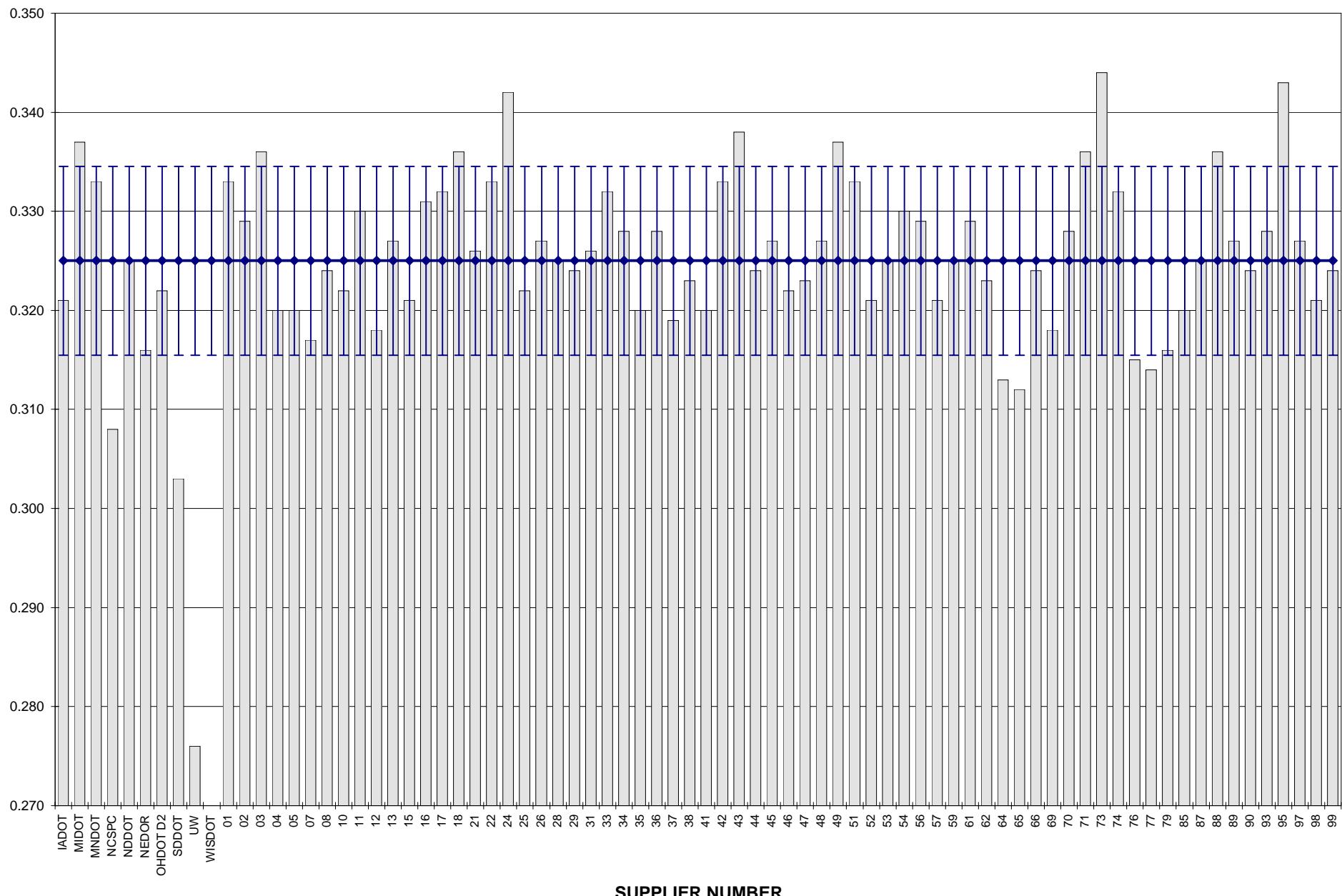


**COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3**

**SUMMARY A**

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**BBR m-VALUE**



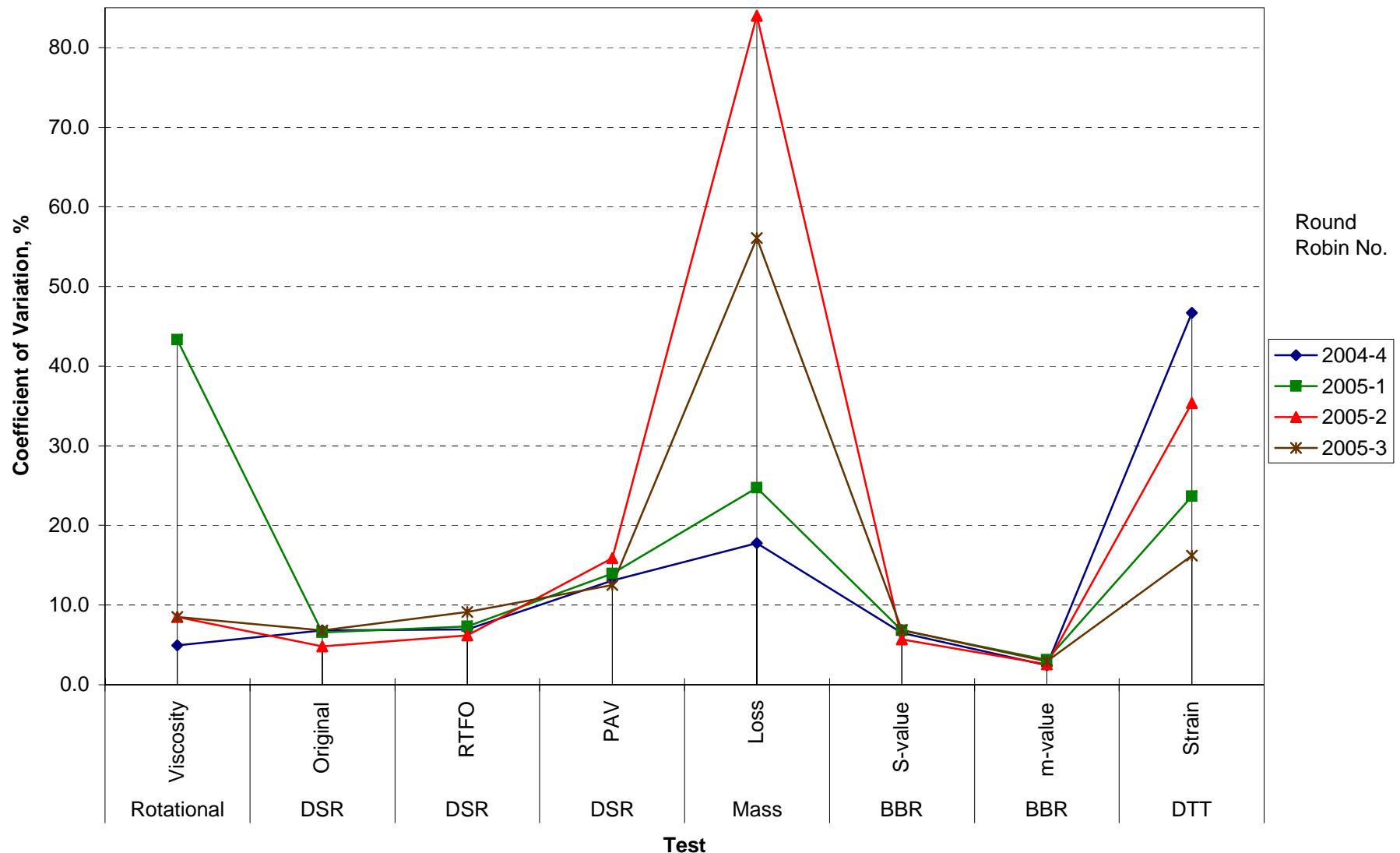
**COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3**  
**SUMMARY A**

**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	
2004-4	79	4.914	6.823	6.930	13.070	17.755	6.535	2.449	46.703	
2005-1	77	43.315	6.583	7.303	13.928	24.737	6.813	3.138	23.643	
2005-2	77	8.535	4.800	6.182	15.892	83.971	5.683	2.597	35.372	
2005-3	78	8.518	6.818	9.166	12.533	56.096	6.908	2.933	16.213	

**COMBINED STATE BINDER GROUP ROUND ROBIN 2005-3**  
**SUMMARY A**

**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
<b>Average</b>	0.3993	1.2512	2.9550	4,281.01	-0.0730	208.47	0.3257
<b>Std. Dev.</b>	0.0165	0.0770	0.1893	536.53	0.0277	11.40	0.0077
<b>Coef. of Var.</b>	4.132	6.156	6.405	12.533	37.876	5.471	2.371