



## SEMICONDUCTOR & CLEANROOM SOLUTIONS

*The most complete line of lubricants for demanding applications -  
Ultra Low Outgassing, Vacuum Stability, Low Particle Generation*



***Synthetic Lubricants***

Innovative Solutions since 1844



# Nye Comparative Chart

## Lubricants for Vacuum & Cleanroom Applications



Product Name	Temperature Range (°C)	Base Oil Chemistry	Thickener Type	Base Oil Viscosity ASTM D-445 (cSt)		NLGI Grade ASTM D-217	Oil Separation (24 hrs, 100°C)	Evaporation (24 hrs, 100°C)	Vacuum Stability ASTM E-595 (% wt)		Vapor Pressure Knudsen (25°C)
				100°C	40°C				TML	CVCM	
<a href="#">NyeTorr® 6200</a>	-45 to 150	MAC	PTFE	14	106	1	3.5%	0.00%	0.069	0.015	4.7 x 10 <sup>-12</sup> Torr
<a href="#">NyeTorr® 6300</a>	-75 to 250	PFPE	PTFE	56	187	2	4.8%	0.00%	0.023	0.008	4.5 x 10 <sup>-12</sup> Torr
<a href="#">NyeTorr® 5200</a>	-45 to 150	MAC	PTFE	15	108	1	2.8%	0.00%	0.132	0.032	4 x 10 <sup>-12</sup> Torr
<a href="#">NyeTorr® 5300</a>	-65 to 250	PFPE	PTFE	45	140	1-2	5.8%	0.02%	0.089	0.024	6 x 10 <sup>-11</sup> Torr
<a href="#">NyeTorr® 5350</a>	-55 to 250	PFPE	PTFE	28	152	2	5.6%	0.00%	0.247	0.130	1.6 x 10 <sup>-10</sup> Torr
<a href="#">NyeTorr® 5370</a>	-70 to 250	PFPE	PTFE	86	310	2	3.9%	0.02%	0.269	0.104	3.8 x 10 <sup>-10</sup> Torr
<a href="#">NyeTorr® 5380</a>	-10 to 250	PFPE	PTFE	58	800	3	2.5%	0.00%	0.042	0.013	3 x 10 <sup>-14</sup> Torr (20°C)
<a href="#">NyeClean® 5011</a>	-54 to 125	PAO	Lithium Soap	6.4	33	2	2.0%	0.10%	N/A	N/A	N/A
<a href="#">NyeClean® 5011A</a>	-54 to 125	PAO	Lithium Soap	6.4	33	3	0.0%	0.05%	N/A	N/A	N/A
<a href="#">NyeClean® 5023</a>	-30 to 150	Ester	Urea	14	120	3	1.1%	0.13%	2.733	1.245	3.6 x 10 <sup>-11</sup> Torr
<a href="#">NyeClean® 5033F</a>	-40 to 180	ADE	Urea	11.8	94.4	3	0.0%	0.00%	9.676	4.495	1.0 x 10 <sup>-9</sup> Torr
<a href="#">NyeClean® 5067</a>	-65 to 250	PFPE	PTFE	45	150	3	3.4%	0.00%	0.281	0.150	2.17 x 10 <sup>-8</sup> Torr
<a href="#">NyeClean® 5077</a>	-55 to 250	PFPE	PTFE	28	152	2	5.9%	0.02%	0.812	0.067	1.6 x 10 <sup>-10</sup> Torr
<a href="#">NyeClean® 5087</a>	-40 to 250	PFPE	PTFE	200	700	2	3.3%	0.03%	0.612	0.088	2.5 x 10 <sup>-10</sup> Torr
<a href="#">NyeClean® 5088</a>	-10 to 250	PFPE	PTFE	58	800	2-3	1.7%	0.00%	0.039	0.022	1 x 10 <sup>-13</sup> Torr



The typical properties shown on this document should not be used as a basis for preparing specifications.

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Density (g/cc)	SRV Coefficient of Friction & Wear ASTM D-5707 (100N, 40°C)		4-Ball Wear - ASTM D-2266				Low Temperature Torque ASTM D-1478 (gm-cm)		Microscopic Particulate Contamination	Product Name
			Wear Scar		Coefficient of Friction		Starting	10-min run		
	CoF	Ball Scar	20 kg	40 kg	20 kg	40 kg				
1.05	0.124	0.46 mm	0.52 mm	0.54 mm	0.030	0.091	207	263	< 300 particles/cc, < 35 μm	<a href="#">NyeTorr® 6200</a>
1.89	0.111	0.68 mm	0.95 mm	1.30 mm	0.129	0.112	221	125	< 300 particles/cc, < 35 μm	<a href="#">NyeTorr® 6300</a>
1.05	0.114	0.44 mm	0.50 mm	0.59 mm	0.114	0.100	221	274	< 300 particles/cc, < 35 μm	<a href="#">NyeTorr® 5200</a>
1.91	0.159	0.68 mm	0.76 mm	1.30 mm	0.124	0.103	236	142	< 300 particles/cc, < 35 μm	<a href="#">NyeTorr® 5300</a>
1.91	0.139	0.65 mm	0.44 mm	1.07 mm	0.092	0.120	221	118	< 250 particles/cc, < 35 μm	<a href="#">NyeTorr® 5350</a>
1.89	0.245	1.14 mm	0.75 mm	1.25 mm	0.111	0.097	266	177	< 50 particles/cc, < 35 μm	<a href="#">NyeTorr® 5370</a>
1.91	0.219	1.22 mm	0.74 mm	1.58 mm	0.148	0.130	177	94	< 100 particles/cc, < 35 μm	<a href="#">NyeTorr® 5380</a>
0.89	0.115	0.44 mm	0.45 mm	0.93 mm	0.091	0.082	177	133	N/A	<a href="#">NyeClean® 5011</a>
0.87	0.111	0.44 mm	0.46 mm	0.62 mm	0.055	0.067	354	183	N/A	<a href="#">NyeClean® 5011A</a>
0.98	0.131	0.78 mm	0.78 mm	1.02 mm	0.132	0.092	384	184	< 500 particles/cc, < 35 μm	<a href="#">NyeClean® 5023</a>
0.95	0.120	0.46 mm	0.51 mm	0.62 mm	0.114	0.086	384	56	< 500 particles/cc, < 35 μm	<a href="#">NyeClean® 5033F</a>
1.90	0.141	0.65 mm	0.96 mm	1.36 mm	0.064	0.106	280	189	< 1000 particles/cc, < 35 μm	<a href="#">NyeClean® 5067</a>
1.90	0.135	0.47 mm	0.59 mm	1.56 mm	0.085	0.118	177	96	N/A	<a href="#">NyeClean® 5077</a>
1.90	0.211	1.13 mm	0.58 mm	1.66 mm	0.117	0.115	89	41	< 1000 particles/cc, < 35 μm	<a href="#">NyeClean® 5087</a>
1.91	0.364	1.29 mm	1.06 mm	1.47 mm	0.167	0.121	295	162	< 500 particles/cc, < 35 μm	<a href="#">NyeClean® 5088</a>



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ISO 9001:2008  
ISO 14001:2004  
ISO/TS-16949:2009

