



## Sulfur vs. Peroxide Cures of Millathane® CM and Millathane E34

Millathane® Grade (at 100 parts)	CM		E34	
Zinc Stearate	0.5	0.5	0.5	0.5
Stearic acid	0.25	0.25	0.25	0.25
Ultrasil VN3	25	25	25	25
TP-95	10	10	10	10
MBTS	4		4	
MBT	2		2	
Thanecure® ZM	1		1	
Sulfur	2		2	
DiCup 40C		2		2
SR-350		1		1

<b>Mooney Viscosity, ML(1+4)/100°C</b>	61	68	40	43
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### MDR, 30'/160°C

ML, lb-in	1.3	2.7	1.0	0.9
dNm	1.5	3.0	1.1	1.1
MH, lb-in	20.6	26.3	17.6	14.3
dNm	23.2	29.7	19.9	16.1
ts1, minutes	1.0	0.5	4.3	0.6
t50, minutes	9.9	2.9	9.0	2.4
t90, minutes	15.7	9.9	14.2	10.2

### Press Cure, minutes at 160°C --->

	16	10	14	10
Hardness, Shore A	65	70	60	58
TSE-100*, psi	235	400	215	220
MPa	1.6	2.8	1.5	1.5
TSE-300, psi	750	1800	640	720
MPa	5.2	12.4	4.4	5.0
Tensile Strength, psi	4470	2290	4820	2890
MPa	30.8	15.8	33.2	19.9
Elongation, %	625	325	645	480
Tear, Die C, lb/in	222	128	228	147
kN/m	38.9	22.4	39.9	25.7
Tear, Die B, lb/in	371	137	365	167
kN/m	64.9	24.0	63.9	29.2

\*TSExxx=Tensile Stress at xxx% Elongation

### Hardening after cure, Shore A points

6 months at Room Temperature (22°C), 22°C test	+9	0	+5	+2
<b>Bashore Resilience, %</b>	42	46	51	52
<b>DIN Abrasion, mm<sup>3</sup> loss</b>	64	95	46	62

**Summary:** Peroxide cures of the two polyether millable urethanes, Millathane CM and E34, gave, vs. sulfur cures, lower strength properties (tensile and tear) and poorer abrasion resistance, but better resistance to after-hardening. They would also be expected to show better aging and set properties vs. sulfur cures. Resilience values were slightly higher for the peroxide cures.