



TSE Industries, Inc.
Millathane® Millable Polyurethane Division
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Millathane® CM Hose Compounds

	Friction	Hose Cover	Hose Lining
Millathane CM	100	100	100
Zinc Stearate	0.35	0.35	0.35
N990 Black	20	----	----
N330 Black	----	30	----
N774 Black	----	----	120
Coumarone Indene Resin	20	----	----
DIOP	----	8	30
Polyisobutylene	20	----	----
MBTS	3	3	3
MBT	1.5	1.5	1.5
Thanecure® ZM	0.35	0.35	0.35
Sulfur	1	1	1
Total	166.2	144.2	256.2

Physical Properties, Press Cure at 153° C (307°F)

Hardness, Shore A	55	70	87
Hardness, IRHD	49	67	86
100% Modulus, psi (MPa)	135 (0.9)	375 (2.6)	1090 (7.5)
Tensile Strength, psi (MPa)	2370 (16.3)	4080 (28.1)	2100 (14.5)
Elongation, %	750	570	380
Tear, Die C, lb/in (kN/m)	135 (23.6)	255 (44.6)	240 (42)

Compression Set, 22 hr/70° C (158°F)

% set	56	29	39
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Heat aging, 70 hr/100° C (212° F)

Hardness change, A	+2	0	+3
Hardness change, IRHD	+1	0	+1
Tensile change, %	-11	-12	+7
Elongation change, %	-24	-33	-50

Fluid Immersions, Volume Change, %

ASTM #1 Oil, 70 hr/100°C	0	-7	-15
ASTM #3 Oil, 70 hr/100°C	+63	+17	+3
ASTM Fuel B, 48 hr/40°C	+73	+36	+15
Water, distilled, 168 hr/70°C	+8	+6	+7

Calendering Conditions:

Frictioning: Friction ratio 1.5:1, Roll Temps, °C: Top/Middle/Bottom 95/85/95

Cover: Roll temps, °C: Top/Middle/Bottom 80/80/cool

Lining: Roll temps, °C: Top/Middle/Bottom 75/75/cool (Lining compound extrudes well also)

Construction/Curing (Laboratory):

Hose was made up by hand on a mandrel. All materials were freshened with MEK prior to building. Hose was wrapped in either cloth or Mylar and vulcanized in steam for 75 minutes at 153°C (307°F)