

**KEVLAR®**



# KEVLAR® engineered elastomer with Neoprene GRT

Merge 1F735

**Test compound formulation and properties:**

Neoprene GRT		100	90.8	84.5	69.2
Engineered elastomer 1F735		0	12	20	40
Magnesia (Maglite D)		4	4	4	4
N772 carbon black		58	58	58	58
Rapeseed oil		10	10	10	10
Stearic acid		2	2	2	2
Octylated diphenylamine (Octamine)		2	2	2	2
Zinc oxide		5	5	5	5

KEVLAR® Engineered Elastomer content	pphr	0	12	20	40
KEVLAR® pulp content	pphr	0	2.8	4.6	9.2

<b>Mooney Viscosity at 100°C</b>					
ML 1 + 4	units	49.1	50.8	55.4	69.7

<b>Mooney Scorch MS at 121°C</b>					
Time to + 5 units raise	min	42.1	38.5	41.5	41.1
Time to + 10 units raise	min	48.5	46.1	48.2	47.2
Minimum	min	15.7	18.7	21.3	26.3

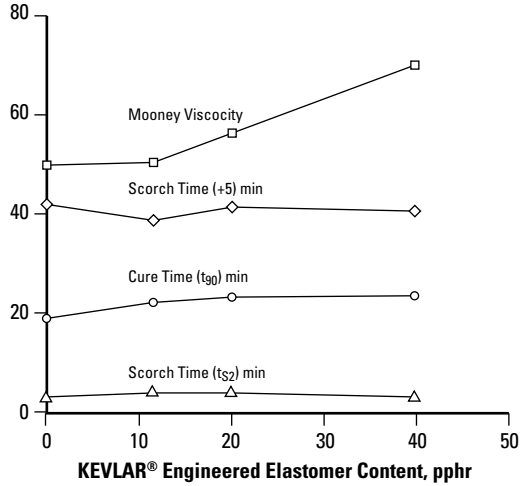
<b>ODR 160°C, 30 min, 3° arc</b>					
M <sub>L</sub>	dN/m	6.4	7.3	9.5	13.9
t <sub>s2</sub>	min	3.28	3.14	3.07	2.77
t <sub>90</sub>	min	19.1	21.8	22.5	23.4
M <sub>H</sub>	dN/m	75.9	86.2	90.9	111.3

<b>Vulcanizate properties measured on 2 mm sheet</b>					
Cure time	min	20	25	25	25
Hardness	°IRHD	68	77	79	88
	°Shore A	67	78	81	89

Machine and cross direction:		MD	XD	MD	XD	MD	XD	MD	XD
Tensile strength	MPa	19.6	18.5	18.5	15.3	18.2	14.1	16.6	13.9
Modulus at 10%	MPa	0.6	0.6	1.2	1.0	4.7	1.3	9.4	2.3
Modulus at 15%	MPa	0.8	0.7	2.1	1.4	7.4	1.8	12.2	3.2
Modulus at 25%	MPa	1.1	1.0	4.6	2.1	10.1	2.7	14.3	4.8
Modulus at 30%	MPa	1.2	1.2	5.7	2.3	10.5	3.0	14.9	5.6
Modulus at 50%	MPa	1.8	1.7	7.3	3.7	10.6	4.2		8.1
Modulus at 100%	MPa	3.7	3.4	8.1	5.7	11.6	6.3		11.1
Modulus at 200%	MPa	10.2	9.3	13.1	11.5	13.4	11.7		
Elongation at break	%	347	400	301	368	248	337	31	137
Tear ISO 34C	kN/m	46.1	43.5	56.7	55.2	63.1	60.8	83.9	71.6
Tear ISO 34B	kN/m	44.5	41.7	46.1	53.9	49.1	52.5	52.9	74.1

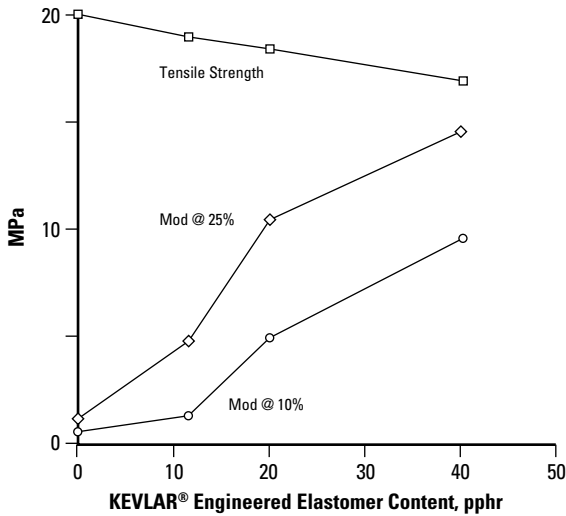
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**Effect of KEVLAR® Engineered Elastomer Content on Processing**

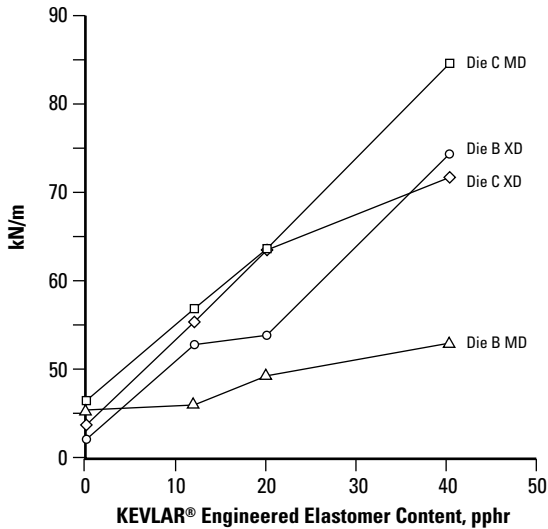


- Engineered elastomer merge 1F735 contains:
  - 23 weight percent reinforcement
  - 77 weight percent Neoprene GRT
- Specific Gravity is 1.28
- “Nugget” shape product form
- Packaged in 15 kilogram kraft bags with a low melt (<100°C) EVA liner

**Effect of KEVLAR® Engineered Elastomer Content on Tensile Strength and Modulus**



**Effect of KEVLAR® Engineered Elastomer Content on Tear Strength**



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