



# Sarlink® TPE ML-1680N NAT (PRELIMINARY DATA)

Teknor Apex Company - Thermoplastic Elastomer

## General Information

### Product Description

Sarlink ML-1600 series is a high performance, high flow thermoplastic elastomer series, available in NAT and BLK designed for automotive interior applications. Sarlink ML-1680N NAT is a medium hardness, medium density grade with excellent surface appearance suitable for injection molding.

### General

Material Status	• Preliminary Data		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Chemical Resistant • Filled • Good Adhesion • Good Flexibility • Good Moldability	• Good Surface Finish • Good Tear Strength • Good Toughness • High Flow • Medium Density	• Medium Hardness • Resilient • Sunlight Resistant
Uses	• Automotive Applications • Automotive Interior Parts • Flexible Grips	• Grommets • Knobs • Rubber Replacement	• Soft Touch Applications
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

## ASTM & ISO Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density	0.990	g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	19	g/10 min	ASTM D1238
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress <sup>2</sup>			ISO 37
Across Flow : 100% Strain	429	psi	
Flow : 100% Strain	545	psi	
Tensile Stress <sup>2</sup>			ISO 37
Across Flow : Break	1090	psi	
Flow : Break	1120	psi	
Tensile Elongation <sup>2</sup>			ISO 37
Across Flow : Break	700	%	
Flow : Break	650	%	
Tear Strength <sup>3</sup>			ISO 34-1
Across Flow	200	lbf/in	
Flow	180	lbf/in	
Compression Set <sup>4</sup>			ISO 815
73°F, 22 hr	37	%	
158°F, 22 hr	53	%	
194°F, 70 hr	72	%	
257°F, 70 hr	100	%	
Hardness	Nominal Value	Unit	Test Method
Shore Hardness			ISO 868
Shore A, 1 sec, Injection Molded	83		
Shore A, 5 sec, Injection Molded	80		
Shore A, 15 sec, Injection Molded	79		

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Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air <sup>5</sup>			ISO 188
Across Flow : 230°F, 1008 hr	5.0	%	
Flow : 230°F, 1008 hr	-1.4	%	
Across Flow : 100% Strain 230°F, 1008 hr	9.6	%	
Flow : 100% Strain 230°F, 1008 hr	16	%	
Across Flow : 257°F, 168 hr	8.1	%	
Flow : 257°F, 168 hr	-3.0	%	
Across Flow : 100% Strain 257°F, 168 hr	8.4	%	
Flow : 100% Strain 257°F, 168 hr	16	%	
Change in Tensile Strain at Break in Air <sup>5</sup>			ISO 188
Across Flow : 230°F, 1008 hr	6.3	%	
Flow : 230°F, 1008 hr	-0.50	%	
Across Flow : 257°F, 168 hr	12	%	
Flow : 257°F, 168 hr	0.40	%	
Change in Shore Hardness in Air			ISO 188
Shore A, 230°F, 1008 hr <sup>6</sup>	2.8		
Shore A, 230°F, 1008 hr <sup>7</sup>	3.4		
Shore A, 230°F, 1008 hr <sup>8</sup>	2.9		
Shore A, 257°F, 168 hr <sup>7</sup>	2.8		
Shore A, 257°F, 168 hr <sup>6</sup>	2.1		
Shore A, 257°F, 168 hr <sup>8</sup>	1.1		
<b>Fill Analysis</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Apparent Viscosity (392°F, 206 sec <sup>-1</sup> )	120	Pa·s	ASTM D3835

### Processing Information

Injection	Nominal Value	Unit
Rear Temperature	340 to 380	°F
Middle Temperature	350 to 390	°F
Front Temperature	360 to 400	°F
Nozzle Temperature	370 to 410	°F
Processing (Melt) Temp	370 to 410	°F
Mold Temperature	77 to 150	°F
Injection Pressure	200 to 1000	psi
Injection Rate	Moderate-Fast	
Back Pressure	25.0 to 50.0	psi
Screw Speed	50 to 100	rpm
Cushion	0.150 to 1.00	in

### Injection Notes

Drying is not necessary. However, if moisture is a problem, dry the pellets for 2 to 4 hours at 150°F (65°C).

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Type 1, 20 in/min

<sup>3</sup> Method Ba, Angle (Unnicked), 20 in/min

<sup>4</sup> Type A

<sup>5</sup> Type 1

<sup>6</sup> 5 sec

<sup>7</sup> 15 sec

<sup>8</sup> 1 sec