

# Santoprene™ 121-50M100

## Thermoplastic Vulcanizate

### Product Description

A soft, black, UV resistant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material combines good physical properties and chemical resistance for use in difficult injection molding applications. This grade of Santoprene™ TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding. It is polyolefin based and recyclable within the manufacturing stream.

### Key Features

- Designed for fast, easy injection molding, especially for complex part geometries.
- Used in sealing applications.
- Recommended for applications requiring improved part surface appearance.
- Designed to be injected at lower molding temperatures or at lower injection pressures.
- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.

### General

Applications	<ul style="list-style-type: none"> <li>▪ Automotive - Glass Encapsulation</li> <li>▪ Automotive - HVAC Flapper Door Seals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Automotive - Seals and Gaskets</li> <li>▪ Automotive - Weather Seals</li> </ul>
Uses	<ul style="list-style-type: none"> <li>▪ Automotive Applications</li> <li>▪ Automotive Exterior Trim</li> </ul>	<ul style="list-style-type: none"> <li>▪ Automotive Interior Trim</li> <li>▪ Automotive Under the Hood</li> <li>▪ Outdoor Applications</li> </ul>
Agency Ratings	<ul style="list-style-type: none"> <li>▪ UL QMFZ2</li> </ul>	<ul style="list-style-type: none"> <li>▪ UL QMFZ8</li> </ul>
RoHS Compliance	<ul style="list-style-type: none"> <li>▪ RoHS Compliant</li> </ul>	
Automotive Specifications	<ul style="list-style-type: none"> <li>▪ CHRYSLER MS-AR-100 AMV</li> </ul>	<ul style="list-style-type: none"> <li>▪ GM GMW15812, Type 4M</li> </ul>
UL File Number	<ul style="list-style-type: none"> <li>▪ E80017</li> </ul>	
Color	<ul style="list-style-type: none"> <li>▪ Black</li> </ul>	
Form(s)	<ul style="list-style-type: none"> <li>▪ Pellets</li> </ul>	
Processing Method	<ul style="list-style-type: none"> <li>▪ Injection Molding</li> </ul>	<ul style="list-style-type: none"> <li>▪ Multi Injection Molding</li> </ul>

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.915	0.915	ASTM D792
Density	0.915 g/cm <sup>3</sup>	0.915 g/cm <sup>3</sup>	ISO 1183

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C)	56	56	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	261 psi	1.80 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	261 psi	1.80 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	637 psi	4.39 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	637 psi	4.39 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	470 %	470 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	470 %	470 %	ISO 37
Compression Set			ASTM D395B
158°F (70°C), 22 hr, Type 1	31 %	31 %	
257°F (125°C), 70 hr, Type 1	42 %	42 %	
Compression Set			ISO 815
158°F (70°C), 22 hr, Type A	31 %	31 %	
257°F (125°C), 70 hr, Type A	42 %	42 %	



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Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
Brittleness Temperature	-76 °F	-60 °C	ASTM D746
Brittleness Temperature	-76 °F	-60 °C	ISO 812

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	180 °F	82 °C
Drying Time	3.0 hr	3.0 hr
Suggested Max Moisture	0.080 %	0.080 %
Suggested Max Regrind	20 %	20 %
Rear Temperature	360 °F	182 °C
Middle Temperature	370 °F	188 °C
Front Temperature	380 °F	193 °C
Nozzle Temperature	390 °F	199 °C
Processing (Melt) Temp	400 to 430 °F	204 to 221 °C
Mold Temperature	50 to 125 °F	10 to 52 °C
Injection Rate	Fast	Fast
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	100 to 200 rpm	100 to 200 rpm
Clamp Tonnage	3.0 to 5.0 tons/in <sup>2</sup>	41 to 69 MPa
Cushion	0.125 to 0.250 in	3.18 to 6.35 mm
Screw L/D Ratio	16.0:1.0 to 20.0:1.0	16.0:1.0 to 20.0:1.0
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	2.0:1.0 to 2.5:1.0
Vent Depth	1.0E-3 in	0.025 mm

#### Injection Notes

Santoprene™ TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

Aging	Typical Value (English)	Typical Value (SI)	Test Based On
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-20 %	-20 %	ASTM D573
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-20 %	-20 %	ISO 188
Change in Ultimate Elongation in Air 302°F (150°C), 168 hr	-3.0 %	-3.0 %	ASTM D573
Change in Tensile Strain at Break in Air 302°F (150°C), 168 hr	-3.0 %	-3.0 %	ISO 188
Change in Durometer Hardness in Air Shore A, 302°F (150°C), 168 hr	0.0	0.0	ASTM D573
Change in Shore Hardness in Air Shore A, 302°F (150°C), 168 hr	0.0	0.0	ISO 188

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating (0.04 in (1.1 mm))	HB	HB	UL 94

