

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

Availability ¹	<ul style="list-style-type: none"> ▪ Africa & Middle East ▪ Asia Pacific 	<ul style="list-style-type: none"> ▪ Europe ▪ Latin America 	<ul style="list-style-type: none"> ▪ North America
Applications	<ul style="list-style-type: none"> ▪ Automotive - Glass Encapsulation ▪ Automotive - HVAC Flapper Door Seals 	<ul style="list-style-type: none"> ▪ Automotive - Seals and Gaskets ▪ Automotive - Weather Seals 	
Uses	<ul style="list-style-type: none"> ▪ Automotive Applications ▪ Automotive Exterior Trim 	<ul style="list-style-type: none"> ▪ Automotive Interior Trim ▪ Automotive Under the Hood 	<ul style="list-style-type: none"> ▪ Outdoor Applications
Agency Ratings	<ul style="list-style-type: none"> ▪ UL QMFZ2 	<ul style="list-style-type: none"> ▪ UL QMFZ8 	
RoHS Compliance	<ul style="list-style-type: none"> ▪ RoHS Compliant 		
Automotive Specifications	<ul style="list-style-type: none"> ▪ CHRYSLER MS-AR-100 AMV 	<ul style="list-style-type: none"> ▪ GM GMW15812, Type 4M 	
UL File Number	<ul style="list-style-type: none"> ▪ E80017 		
Color	<ul style="list-style-type: none"> ▪ Black 		
Form(s)	<ul style="list-style-type: none"> ▪ Pellets 		
Processing Method	<ul style="list-style-type: none"> ▪ Injection Molding 	<ul style="list-style-type: none"> ▪ Multi Injection Molding 	
Revision Date	<ul style="list-style-type: none"> ▪ 01/01/2018 		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.915	0.915	ASTM D792
Density	0.915 g/cm ³	0.915 g/cm ³	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 ²	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

Additional Information

Where applicable, test results based on fan gated, 2.0 mm injection molded plaques. Tensile strength, elongation and tensile stress are measured across the flow direction. Test results are generated by ExxonMobil test methods that may not fully conform to the ASTM and/or ISO methods. Test methods are available upon request. Compression set at 25% deflection. All products purchased directly from an ExxonMobil affiliate in Europe are REACH compliant. For products not imported into Europe by ExxonMobil, customers should assess their legal responsibilities under REACH.

Legal Statement

This product, including the product name, shall not be used or tested in any medical application without the prior written acknowledgement of ExxonMobil Chemical as to the intended use. For detailed Product Stewardship information, please contact Customer Service.

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Processing Statement

Desiccant drying for 3 hours at 80°C (180°F) is recommended. Santoprene™ TPV has a wide temperature processing window from 175 to 230°C (350 to 450°F) and is incompatible with acetal and PVC. For more information, please consult our Safety Data Sheet and Injection Molding Guide.

Notes

Typical properties: these are not to be construed as specifications.

¹ Product may not be available in one or more countries in the identified Availability regions. Please contact your Sales Representative for complete Country Availability.

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