

# Santoprene™ 121-79W233

## Thermoplastic Vulcanizate

### Product Description

A soft, black thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material is specially formulated to bond to sulfur or peroxide-cured thermoset EPDM rubber for corner molding, end caps and special fixation 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 applications requiring excellent adhesion to vulcanized EPDM rubber.
- Specially formulated to replace thermoset EPDM rubber in automotive glass run channel molding applications.
- Designed for shorter processing time compared to thermoset EPDM rubber.

### General

Availability <sup>1</sup>	<ul style="list-style-type: none"> <li>▪ Africa &amp; Middle East</li> <li>▪ Asia Pacific</li> </ul>	<ul style="list-style-type: none"> <li>▪ Europe</li> <li>▪ Latin America</li> </ul>	<ul style="list-style-type: none"> <li>▪ North America</li> </ul>
Applications	<ul style="list-style-type: none"> <li>▪ Automotive - Seals and Gaskets</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>▪ Bonding</li> <li>▪ Outdoor Applications</li> </ul>	
RoHS Compliance	<ul style="list-style-type: none"> <li>▪ RoHS Compliant</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>	
Revision Date	<ul style="list-style-type: none"> <li>▪ 06/20/2014</li> </ul>		

### Physical

	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.930	0.930	ASTM D792
Density	0.930 g/cm <sup>3</sup>	0.930 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)	84	84	

### Elastomers

	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	522 psi	3.60 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	522 psi	3.60 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	1070 psi	7.40 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	1070 psi	7.40 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	620 %	620 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	620 %	620 %	ISO 37
Compression Set			ASTM D395B
158°F (70°C), 22 hr, Type 1	49 %	49 %	
Compression Set			ISO 815
158°F (70°C), 22 hr, Type A	49 %	49 %	

### 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

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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 %
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 and Technical Literature (TL) on "Injection Molding of Corners and End Caps to EPDM Weatherseals".

Aging	Typical Value (English)	Typical Value (SI)	Test Based On
Change in Tensile Strength in Air 212°F (100°C), 70 hr	-4.0 %	-4.0 %	ASTM D573
Change in Tensile Strength in Air 212°F (100°C), 70 hr	-4.0 %	-4.0 %	ISO 188
Change in Ultimate Elongation in Air 212°F (100°C), 70 hr	-1.0 %	-1.0 %	ASTM D573
Change in Tensile Strain at Break in Air 212°F (100°C), 70 hr	-1.0 %	-1.0 %	ISO 188
Change in Durometer Hardness in Air Shore A, 212°F (100°C), 70 hr	-1.0	-1.0	ASTM D573
Change in Shore Hardness in Air Shore A, 212°F (100°C), 70 hr	-1.0	-1.0	ISO 188

#### Additional Information

Where applicable, test results based on fan gated, injection molded plaques.

Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C.

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.

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### Legal Statement

For detailed Product Stewardship information, please contact Customer Service.

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.

### 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, Injection Molding Guide and Technical Literature (TL) on "Injection Molding of Corners and End Caps to EPDM Weatherseals".

### Notes

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

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

For additional technical, sales and order assistance: [www.exxonmobilchemical.com/ContactUs](http://www.exxonmobilchemical.com/ContactUs)

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