

# Santoprene™ 111-35

## Thermoplastic Vulcanizate

### Product Description

A soft, black, versatile thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material combines good physical properties and chemical resistance for use in a wide range of 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

- Recommended for applications requiring excellent flex fatigue resistance.
- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- Although not NSF certified, this product has a Material Supplier Form on file with NSF to facilitate its evaluation for use in applications requiring NSF certification.
- Excellent ozone resistance.
- Designed for applications requiring high-flow materials.
- RoHS compliant.

### 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 - Plugs, Bumpers, Grommets, Clips</li> <li>• Automotive - Seals and Gaskets</li> <li>• Consumer - Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• General Purpose</li> <li>• Printers</li> <li>• Seals and Gaskets</li> </ul>	<ul style="list-style-type: none"> <li>• Soft Touch Grips</li> <li>• Sporting Goods</li> </ul>
Uses	<ul style="list-style-type: none"> <li>• Automotive Applications</li> <li>• Cell Phones</li> <li>• Construction Applications</li> </ul>	<ul style="list-style-type: none"> <li>• Gaskets</li> <li>• Printer Parts</li> <li>• Seals</li> </ul>	<ul style="list-style-type: none"> <li>• Sporting Goods</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>• CHRYSLERMS-AR-100 AMN</li> <li>• FORD WSD-M2D378-A4</li> </ul>	<ul style="list-style-type: none"> <li>• GM GMN3927</li> <li>• GM GMW15813 Type 2</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>	
Revision Date	<ul style="list-style-type: none"> <li>• 06/20/2014</li> </ul>		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
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), 0.0787 in (2.00 mm)	38 □	38 □	

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Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	145 psi	1.00 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	145 psi	1.00 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	421 psi	2.90 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	421 psi	2.90 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	330 %	330 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	330 %	330 %	ISO 37
Tear Strength - Across Flow (73°F (23°C), Die C)	57.1 lbf/in	10.0 kN/m	ASTM D624
Tear Strength - Across Flow (73°F (23°C), Method Bb, Angle (Nicked))	57 lbf/in	10 kN/m	ISO 34-1
Compression Set (73°F (23°C), 22 hr, Type 1)	10 %	10 %	ASTM D395B
Compression Set (257°F (125°C), 70 hr, Type 1)	31 %	31 %	
Compression Set (73°F (23°C), 22 hr, Type A)	10 %	10 %	ISO 815
Compression Set (257°F (125°C), 70 hr, Type A)	31 %	31 %	

Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
Brittleness Temperature	-81 °F	-63 °C	ASTM D746
Brittleness Temperature	-81 °F	-63 °C	ISO 812

Injection	Typical Value (English)	Typical Value (SI)	
Drying Temperature	180 °F	82.2 °C	<input type="checkbox"/>
Drying Time	3.0 hr	3.0 hr	<input type="checkbox"/>
Suggested Max Moisture	0.080 %	0.080 %	<input type="checkbox"/>
Suggested Max Regrind	20 %	20 %	<input type="checkbox"/>
Rear Temperature	350 to 380 °F	177 to 193 °C	<input type="checkbox"/>
Middle Temperature	355 to 390 °F	179 to 199 °C	<input type="checkbox"/>
Front Temperature	355 to 400 °F	179 to 204 °C	<input type="checkbox"/>
Nozzle Temperature	375 to 445 °F	191 to 229 °C	<input type="checkbox"/>
Processing (Melt) Temp	380 to 465 °F	193 to 241 °C	<input type="checkbox"/>
Mold Temperature	50.0 to 125 °F	10.0 to 51.7 °C	<input type="checkbox"/>
Injection Rate	Fast <input type="checkbox"/>	Fast <input type="checkbox"/>	<input type="checkbox"/>
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa	<input type="checkbox"/>
Screw Speed	100 to 200 rpm	100 to 200 rpm	<input type="checkbox"/>
Clamp Tonnage	3.0 to 5.0 tons/in <sup>2</sup>	41 to 69 MPa	<input type="checkbox"/>
Cushion	0.125 to 0.250 in	3.18 to 6.35 mm	<input type="checkbox"/>
Screw L/D Ratio	16.0:1.0 to <input type="checkbox"/> 20.0:1.0	16.0:1.0 to <input type="checkbox"/> 20.0:1.0	<input type="checkbox"/>
Screw Compression Ratio	2.0:1.0 to 2.5:1.0 <input type="checkbox"/>	2.0:1.0 to 2.5:1.0 <input type="checkbox"/>	<input type="checkbox"/>
Vent Depth	1.0E-3 in	0.025 mm	<input type="checkbox"/>

**Injection Notes**

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

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Aging	Typical Value (English)	Typical Value (SI)	Test Based On
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-29 %	-29 %	ASTM D573
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-29 %	-29 %	ISO 188
Change in Ultimate Elongation in Air 302°F (150°C), 168 hr	-1.0 %	-1.0 %	ASTM D573
Change in Tensile Strain at Break in Air 302°F (150°C), 168 hr	-1.0 %	-1.0 %	ISO 188
Change in Durometer Hardness in Air Shore A, 302°F (150°C), 168 hr	-1.0 □	-1.0 □	ASTM D573
Change in Shore Hardness in Air Shore A, 302°F (150°C), 168 hr	-1.0 □	-1.0 □	ISO 188

  

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating (0.0591 in (1.50 mm))	HB □	HB □	UL 94

**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.

**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.

**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 Material Safety Data Sheet and Injection Molding Guide.

**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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