

# Santoprene™ 8211-45

## Thermoplastic Vulcanizate

Product Description	Key Features
A soft, colorable, non-hygroscopic 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 completely recyclable.	<ul style="list-style-type: none"> <li>• Non-hygroscopic product, requires little to no drying before processing.</li> <li>• Neutral, easy coloring formulation.</li> <li>• Recommended for applications requiring excellent ozone resistance.</li> <li>• Used in sealing applications.</li> <li>• Recommended for applications requiring excellent flex fatigue resistance.</li> <li>• UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.</li> <li>• EU and China RoHS compliant.</li> </ul>

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> <li>• South America</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Automotive - Grips</li> <li>• Automotive - HVAC Flapper Door Seals</li> <li>• Automotive - Interior</li> <li>• Automotive - Interior Mat</li> </ul>	<ul style="list-style-type: none"> <li>• Automotive - Weather Seals</li> <li>• Consumer - Electronics</li> <li>• Consumer - Floor Care</li> <li>• Consumer - Kitchen Tools</li> </ul>	<ul style="list-style-type: none"> <li>• Consumer - Soft Touch Grips</li> <li>• Consumer Applications</li> <li>• Seals and Gaskets</li> </ul>
Uses	<ul style="list-style-type: none"> <li>• Automotive Applications</li> <li>• Cell Phones</li> </ul>	<ul style="list-style-type: none"> <li>• Consumer Applications</li> <li>• Flexible Grips</li> </ul>	<ul style="list-style-type: none"> <li>• Seals</li> </ul>
Agency Ratings	<ul style="list-style-type: none"> <li>• EU Annex XVII of Regulation (EC) No 1907/2006</li> </ul>	<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>		
UL File Number	<ul style="list-style-type: none"> <li>• E80017</li> </ul>		
Color	<ul style="list-style-type: none"> <li>• Natural Color</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>• 07/13/2011</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)	49	49	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	218 psi	1.50 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	218 psi	1.50 MPa	ISO 37

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

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**ExxonMobil Chemical Santoprene™ 8211-45  
Thermoplastic Vulcanizate**

<b>Elastomers</b>	<b>Typical Value (English)</b>	<b>Typical Value (SI)</b>	<b>Test Based On</b>
Tensile Strength at Break - Across Flow (73°F (23°C))	522 psi	3.60 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	522 psi	3.60 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	410 %	410 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	410 %	410 %	ISO 37
Compression Set			ASTM D395B
158°F (70°C), 22.0 hr, Type 1	25 %	25 %	
Compression Set			ISO 815
158°F (70°C), 22.0 hr, Type A	25 %	25 %	

<b>Thermal</b>	<b>Typical Value (English)</b>	<b>Typical Value (SI)</b>	<b>Test Based On</b>
Brittleness Temperature	-80 °F	-62 °C	ASTM D746
Brittleness Temperature	-80 °F	-62 °C	ISO 812
RTI Elec	212 °F	100 °C	UL 746
RTI Str			UL 746
0.0433 in (1.10 mm)	194 °F	90.0 °C	
0.118 in (3.00 mm)	203 °F	95.0 °C	

<b>Injection</b>	<b>Typical Value (English)</b>	<b>Typical Value (SI)</b>
Suggested Max Moisture	0.080 %	0.080 %
Suggested Max Re grind	20 %	20 %
Rear Temperature	350 to 375 °F	177 to 191 °C
Middle Temperature	355 to 380 °F	179 to 193 °C
Front Temperature	365 to 390 °F	185 to 199 °C
Nozzle Temperature	365 to 410 °F	185 to 210 °C
Processing (Melt) Temp	290 to 420 °F	143 to 216 °C
Mold Temperature	75.0 to 125 °F	23.9 to 51.7 °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	0.0010 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.

<b>Aging</b>	<b>Typical Value (English)</b>	<b>Typical Value (SI)</b>	<b>Test Based On</b>
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-10 %	-10 %	ASTM D573
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-10 %	-10 %	ISO 188

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<b>Aging</b>	<b>Typical Value (English)</b>	<b>Typical Value (SI)</b>	<b>Test Based On</b>
Change in Ultimate Elongation in Air 302°F (150°C), 168 hr	-26 %	-26 %	ASTM D573
Change in Tensile Strain at Break in Air 302°F (150°C), 168 hr	-26 %	-26 %	ISO 188
Change in Durometer Hardness in Air Shore A, 302°F (150°C), 168 hr	2.0	2.0	ASTM D573
Change in Shore Hardness in Air Shore A, 302°F (150°C), 168 hr	2.0	2.0	ISO 188

<b>Flammability</b>	<b>Typical Value (English)</b>	<b>Typical Value (SI)</b>	<b>Test Based On</b>
Flame Rating			UL 94
0.0433 in (1.10 mm)	HB	HB	
0.118 in (3.00 mm)	HB	HB	

**Additional Information**

Values are for injection molded plaques, fan-gated, 102.0 mm x 152.0 mm x 2.0 mm (4.000" x 6.000" x 0.080").  
Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C.  
Compression set at 25% deflection.  
Not recommended for hot oil.

**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.

**Processing Statement**

Desiccant drying for 3 hours at 80°C (180°F) can be performed if desired. 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**

<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.

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