

# Santoprene™ 8221-70

## Thermoplastic Vulcanizate

Product Description		Key Features	
<p>A soft, colorable, UV resistant 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 applications. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding or blow molding. It is polyolefin based and recyclable within the manufacturing stream.</p>		<ul style="list-style-type: none"> <li>UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.</li> <li>Neutral, easy coloring formulation.</li> <li>Used in sealing applications.</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> </ul>
Applications	<ul style="list-style-type: none"> <li>Industrial - Architectural and Construction</li> </ul>		
Uses	<ul style="list-style-type: none"> <li>Construction Applications</li> <li>Expansion Joint</li> </ul>	<ul style="list-style-type: none"> <li>Glazing</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>		
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>Blow Molding</li> <li>Extrusion Blow Molding</li> </ul>	<ul style="list-style-type: none"> <li>Injection Blow Molding</li> <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>06/18/2018</li> </ul>		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.950	0.950	ASTM D792
Density	0.950 g/cm <sup>3</sup>	0.950 g/cm <sup>3</sup>	ISO 1183
Outdoor Suitability	f1	f1	UL 746C

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C)	75	75	
Shore Hardness <sup>2</sup>			ISO 7619-1
Shore A, 15 sec, 73°F (23°C)	69	69	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	421 psi	2.90 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	421 psi	2.90 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	986 psi	6.80 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	986 psi	6.80 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	600 %	600 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	600 %	600 %	ISO 37
Compression Set			ASTM D395B
158°F (70°C), 22 hr, Type 1	38 %	38 %	
257°F (125°C), 70 hr, Type 1	58 %	58 %	
Compression Set			ISO 815
158°F (70°C), 22 hr, Type A	38 %	38 %	
257°F (125°C), 70 hr, Type A	58 %	58 %	
Compression Set <sup>3</sup>			3rd Party Test Method
257°F (125°C), 70 hr, Type A	48 %	48 %	

Santoprene™ 8221-70  
Thermoplastic Vulcanizate

Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
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	185 °F	85.0 °C	UL 746

Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Comparative Tracking Index (CTI)	PLC 0	PLC 0	UL 746
High Amp Arc Ignition (HAI)	PLC 1	PLC 1	UL 746

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	355 to 385 °F	179 to 196 °C
Middle Temperature	365 to 390 °F	185 to 199 °C
Front Temperature	375 to 400 °F	191 to 204 °C
Nozzle Temperature	375 to 410 °F	191 to 210 °C
Processing (Melt) Temp	390 to 420 °F	199 to 216 °C
Mold Temperature	75 to 125 °F	24 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.

Extrusion	Typical Value (English)	Typical Value (SI)
Melt Temperature	365 to 430 °F	185 to 221 °C
Die Temperature	365 to 430 °F	185 to 221 °C

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating			UL 94
0.04 in (1.1 mm)	HB	HB	
0.06 in (1.6 mm)	HB	HB	
0.12 in (3.0 mm)	HB	HB	

Additional Information	Typical Value (English)	Typical Value (SI)
------------------------	-------------------------	--------------------

## Santoprene™ 8221-70

### Thermoplastic Vulcanizate

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. This grade is certified by CSTB in Grade 5 class (Working temperature range: [-25°C; +75°C]) and is conforming with the characteristics defined in the certification reference system QB36 (see <http://evaluation.cstb.fr/fr/certifications-produits-services/produit/matieres-souples/>)

064-N051b<sub>1</sub><http://evaluation.cstb.fr>

#### 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.

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 Extrusion 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.

<sup>2</sup> on extruded tapes (x3)

<sup>3</sup> on extruded tapes (x3), CSTB - QB36

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

©2020 ExxonMobil. ExxonMobil, the ExxonMobil logo, the interlocking "X" device and other product or service names used herein are trademarks of ExxonMobil, unless indicated otherwise. This document may not be distributed, displayed, copied or altered without ExxonMobil's prior written authorization. To the extent ExxonMobil authorizes distributing, displaying and/or copying of this document, the user may do so only if the document is unaltered and complete, including all of its headers, footers, disclaimers and other information. You may not copy this document to or reproduce it in whole or in part on a website. ExxonMobil does not guarantee the typical (or other) values. Any data included herein is based upon analysis of representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, freedom from patent infringement, suitability, accuracy, reliability, or completeness of this information or the products, materials or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. We expressly disclaim liability for any loss, damage or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. This document is not an endorsement of any non-ExxonMobil product or process, and we expressly disclaim any contrary implication. The terms "we," "our," "ExxonMobil Chemical" and "ExxonMobil" are each used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliate either directly or indirectly stewarded.

[exxonmobilchemical.com](http://www.exxonmobilchemical.com)