

# Santoprene™ 8221-60

## Thermoplastic Vulcanizate

### Product Description

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.

### Key Features

- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- Neutral, easy coloring formulation.
- Used in sealing applications.

### 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	Industrial - Architectural and Construction		
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 QMFZ2	UL QMFZ8	
RoHS Compliance	RoHS Compliant		
UL File Number	E80017		
Color	Natural Color		
Form(s)	Pellets		
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	06/18/2018		

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)	64	64	
Shore Hardness <sup>2</sup>			ISO 7619-1
Shore A, 15 sec, 73°F (23°C)	58	58	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	319 psi	2.20 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	319 psi	2.20 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	827 psi	5.70 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	827 psi	5.70 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	32 %	32 %	
257°F (125°C), 70 hr, Type 1	60 %	60 %	
Compression Set			ISO 815
158°F (70°C), 22 hr, Type A	32 %	32 %	
257°F (125°C), 70 hr, Type A	60 %	60 %	
Compression Set <sup>3</sup>			3rd Party Test Method
158°F (70°C), 22 hr, Type A	41 %	41 %	

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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
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
Dielectric Strength 73°F (23°C), 0.0787 in (2.00 mm)	790 V/mil	31 kV/mm	ASTM D149
Dielectric Constant 73°F (23°C), 0.0791 in (2.01 mm)	2.30	2.30	ASTM D150
Dielectric Constant 73°F (23°C), 0.0791 in (2.01 mm)	2.30	2.30	IEC 60250

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	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 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	355 to 420 °F	179 to 216 °C
Die Temperature	350 to 420 °F	177 to 216 °C

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

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

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-N050b<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.

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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, 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)

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