ExxonMobil

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[1]	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Applications	• Automotive - Plugs, Bumpers, Grommets, Clips • Automotive - Seals and Gaskets • Consumer - Electronics	• General Purpose • Printers • Seals and Gaskets	• Soft Touch Grips • Sporting Goods
Uses	• Automotive Applications • Cell Phones • Construction Applications	• Gaskets • Printer Parts • Seals	• Sporting Goods
Agency Ratings	• UL QMFZ2	• UL QMFZ8	
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR-100 AMN • FORD WSD-M2D378-A4	• GM GMN3927 • GM GMW15813 Type 2	
UL File Number	• E80017		
Color	• Black		
Form(s)	• Pellets		
Processing Method	• Injection Molding	• Multi Injection Molding	
Revision Date	• 06/20/2014		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Specific Gravity	0.930 □	0.930 □	ASTM D792
Density	0.930 g/cm³	0.930 g/cm³	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			ISO 34-1
73°F (23°C), Method Bb, Angle (Nicked)	57 lbf/in	10 kN/m	
Compression Set			ASTM D395B
73°F (23°C), 22 hr, Type 1	10 %	10 %	
257°F (125°C), 70 hr, Type 1	31 %	31 %	
Compression Set			ISO 815
73°F (23°C), 22 hr, Type A	10 %	10 %	
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	
Drying Time	3.0 hr	3.0 hr	
Suggested Max Moisture	0.080 %	0.080 %	
Suggested Max Regrind	20 %	20 %	
Rear Temperature	350 to 380 °F	177 to 193 °C	
Middle Temperature	355 to 390 °F	179 to 199 °C	
Front Temperature	355 to 400 °F	179 to 204 °C	
Nozzle Temperature	375 to 445 °F	191 to 229 °C	
Processing (Melt) Temp	380 to 465 °F	193 to 241 °C	
Mold Temperature	50.0 to 125 °F	10.0 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/in²	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.

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

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.

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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.

[1] 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

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