

Santoprene™ 111-35

Thermoplastic Vulcanizate

Product Description	Key Features
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 completely recyclable.	<ul style="list-style-type: none"> Recommended for applications requiring excellent flex fatigue resistance. UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component. Excellent ozone resistance. Designed for applications requiring high-flow materials. EU and China RoHS compliant.

General			
Availability ¹	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific 	<ul style="list-style-type: none"> Europe Latin America 	<ul style="list-style-type: none"> North America South America
Applications	<ul style="list-style-type: none"> Automotive - Plugs, Bumpers, Grommets, Clips Automotive - Seals and Gaskets Consumer - Electronics 	<ul style="list-style-type: none"> General Purpose Printers Seals and Gaskets 	<ul style="list-style-type: none"> Soft Touch Grips Sporting Goods
Uses	<ul style="list-style-type: none"> Automotive Applications Cell Phones Construction Applications 	<ul style="list-style-type: none"> Gaskets Printer Parts Seals 	<ul style="list-style-type: none"> Sporting Goods
Agency Ratings	<ul style="list-style-type: none"> EU Annex XVII of Regulation (EC) No 1907/2006 	<ul style="list-style-type: none"> UL QMFZ2 	<ul style="list-style-type: none"> UL QMFZ8
RoHS Compliance	<ul style="list-style-type: none"> RoHS Compliant 		
Automotive Specifications	<ul style="list-style-type: none"> CHRYSLER MS-AR100 AMN FORD WSD-M2D378-A4 	<ul style="list-style-type: none"> GM GMN3927 GM GMP.E/P.097 	
UL File Number	<ul style="list-style-type: none"> E80017 		
Color	<ul style="list-style-type: none"> Black 		
Form(s)	<ul style="list-style-type: none"> Pellets 		
Processing Method	<ul style="list-style-type: none"> Injection Molding 	<ul style="list-style-type: none"> Multi Injection Molding 	
Revision Date	<ul style="list-style-type: none"> 02/17/2011 		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Specific Gravity	0.950	0.950	ASTM D792
Density	0.950 g/cm ³	0.950 g/cm ³	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	

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

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

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Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
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), 22.0 hr, Type 1	10 %	10 %	
257°F (125°C), 70.0 hr, Type 1	31 %	31 %	
Compression Set			ISO 815
73°F (23°C), 22.0 hr, Type A	10 %	10 %	
257°F (125°C), 70.0 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 Re grind	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/in ²	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.

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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

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.

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) 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

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.

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