Santoprene™ 111-55
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.	***This grade is being discontinued. Please contact your Sales Representative for suggested alternate products.*** • Recommended for applications requiring excellent flex fatigue resistance. • Excellent ozone resistance. • Designed for applications requiring high-flow materials. • Recommended for applications requiring superior part surface appearance. • UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component. • EU Directive 2002/95/EC (RoHS) compliant.

General			
Availability [1]	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South America
Applications	• Automotive - Boots and Bellows for Steering and Suspension • Automotive - Seals and Gaskets • Consumer - Electronics • Industrial - Seals and Gaskets		
Uses	• Automotive Applications • Cell Phones • Consumer Applications	• Gaskets • Industrial Applications • Printer Parts	• Seals
Agency Ratings	• EU 2003/11/EC	• UL QMFZ2	• UL QMFZ8
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR100 CMN	• FORD WSD-M2D378-A4	• VALEO VMS-8734
Color	• Black		
Form(s)	• Pellets		
Processing Method	• Injection Molding	• Multi Injection Molding	
Revision Date	• 07/02/2009		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Specific Gravity	0.970	0.970	ASTM D792
Density	0.970 g/cm³	0.970 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)	59	59	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	276 psi	1.90 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	276 psi	1.90 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	667 psi	4.60 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	667 psi	4.60 MPa	ISO 37

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

ExxonMobil Chemical Santoprene™ 111-55
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Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Elongation at Break - Across Flow (73°F (23°C))	400 %	400 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	400 %	400 %	ISO 37
Compression Set			ASTM D395B
73°F (23°C), 22.0 hr, Type 1	12 %	12 %	
257°F (125°C), 70.0 hr, Type 1	34 %	34 %	
Compression Set			ISO 815
73°F (23°C), 22.0 hr, Type A	12 %	12 %	
257°F (125°C), 70.0 hr, Type A	34 %	34 %	

Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
Brittleness Temperature	-76 °F	-60 °C	ASTM D746
Brittleness Temperature	-76 °F	-60 °C	ISO 812

Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Dielectric Strength (0.0800 in (2.03 mm))	780 V/mil	31 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
73°F (23°C), 0.0780 in (1.98 mm)	2.60	2.60	
Dielectric Constant			IEC 60250
73°F (23°C), 0.0780 in (1.98 mm)	2.60	2.60	

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	0.0010 in	0.025 mm

Injection Notes
Santoprene TPV is incompatible with acetal and PVC. An SPI/SPE #3 finish is recommended (do not polish). 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			ASTM D573
302°F (150°C), 168 hr	-12 %	-12 %	
Change in Tensile Strength in Air			ISO 188
302°F (150°C), 168 hr	-12 %	-12 %	
Change in Ultimate Elongation in Air			ASTM D573
302°F (150°C), 168 hr	16 %	16 %	
Change in Tensile Strain at Break in Air			ISO 188
302°F (150°C), 168 hr	16 %	16 %	
Change in Durometer Hardness in Air			ASTM D573
Shore A, 302°F (150°C), 168 hr	3.0	3.0	
Change in Shore Hardness in Air			ISO 188
Shore A, 302°F (150°C), 168 hr	3.0	3.0	
Continuous Upper Temperature Resistance	275 °F	135 °C	SAE J2236

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.

For additional technical, sales and order assistance:

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