Santoprene™ 111-45

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.	• Recommended for applications requiring excellent flex fatigue resistance. • Excellent ozone 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. • Used in sealing applications. • RoHS compliant.

General			
Availability [1]	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South America
Applications	• Automotive - Air Filter Gaskets • Automotive - HVAC Flapper Door Seals • Automotive - Motor Brush Holders • Automotive - Plugs, Bumpers, Grommets, Clips	• Automotive - Seals and Gaskets • Consumer - Electronics • Consumer - Floor Care • General Purpose	• Home & Garden • Industrial - Seals and Gaskets • Printers
Uses	• Automotive Applications • Cell Phones • Consumer Applications	• Gaskets • Industrial Applications • Printer Parts	• Seals
Agency Ratings	• EU Annex XVII of Regulation (EC) No 1907/2006	• UL QMFZ2	• UL QMFZ8
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR100 BMN	• FORD WSD-M2D378-A4	• GM GMP.E/P.137
UL File Number	• E80017		
Color	• Black		
Form(s)	• Pellets		
Processing Method	• Injection Molding	• Multi Injection Molding	
Revision Date	• 01/22/2013		

Physical	Typical Value	(English)	Typical Value	(SI)	Test Based On
Specific Gravity	0.960		0.960		ASTM D792
Density	0.960	g/cm³	0.960	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)	49		49		

Elastomers	Typical Value	(English)	Typical Value	(SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	203	psi	1.40	MPa	ASTM D412

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 Stress at 100% - Across Flow (73°F (23°C))	203	psi	1.40	MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	508	psi	3.50	MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	508	psi	3.50	MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	340	%	340	%	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	340	%	340	%	ISO 37
Tear Strength - Across Flow (73°F (23°C), Die C)	62.8	lbf/in	11.0	kN/m	ASTM D624
Tear Strength - Across Flow					ISO 34-1
73°F (23°C), Method Bb, Angle (Nicked)	63	lbf/in	11	kN/m	
Compression Set					ASTM D395B
73°F (23°C), 22.0 hr, Type 1	11	%	11	%	
257°F (125°C), 70.0 hr, Type 1	35	%	35	%	
Compression Set					ISO 815
73°F (23°C), 22.0 hr, Type A	11	%	11	%	
257°F (125°C), 70.0 hr, Type A	35	%	35	%	

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

Electrical	Typical Value	(English)	Typical Value	(SI)	Test Based On
Dielectric Strength					ASTM D149
73°F (23°C), 0.0800 in (2.03 mm)	690	V/mil	27	kV/mm	
Dielectric Constant					ASTM D150
73°F (23°C), 0.0780 in (1.98 mm)	2.40		2.40		
Dielectric Constant					IEC 60250
73°F (23°C), 0.0780 in (1.98 mm)	2.40		2.40		

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

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Injection	Typical Value (English)		Typical Value (SI)	
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.

Aging	Typical Value (English)		Typical Value (SI)		Test Based On
Change in Tensile Strength in Air	-23	%	-23	%	ASTM D573
Change in Tensile Strength in Air	-23	%	-23	%	ISO 188
Change in Ultimate Elongation in Air	26	%	26	%	ASTM D573
Change in Tensile Strain at Break in Air	26	%	26	%	ISO 188
Change in Durometer Hardness in Air	1.0		1.0		ASTM D573
Change in Shore Hardness in Air	1.0		1.0		ISO 188

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating (0.0394 in (1.00 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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