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.
- Excellent ozone resistance.
- Designed for applications requiring high-flow materials.

General

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 GMW15813 Type 2
UL File Number	• E80017		
Color	• Black		
Form(s)	• Pellets		
Processing Method	• Injection Molding	• Multi Injection Molding	

Physical	Typical Value (English)		Typical Value (SI)		Test Based On
Density / 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)	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
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
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	%	

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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

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 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 to 125	°F	10 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^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	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 (0.06 in (1.5 mm))	HB	HB	UL 94