Santoprene™ 251-70W232

Thermoplastic Vulcanizate

Product Description

A soft, colorable, flame retardant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material has good fluid resistance and contains non-ether brominated flame retardants. It does not contain metal deactivators. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding, extrusion or blow molding. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- Recommended for applications requiring a flame retardant material- UL 94 Vertical Flame rated.
- Recommended for applications requiring excellent flex fatigue resistance.
- Recommended for applications requiring excellent ozone resistance.

General

Availability [1]	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Applications	• Automotive - Flame Retardant Connectors and Seals	• Electrical - Flame Retardant Connectors and Seals	
Uses	• Automotive Applications • Cable Jacketing	• Flexible Cord Jacketing • Wire & Cable Applications	
Agency Ratings	• UL QMFZ2	• UL QMFZ8	
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• GM GMW15702-250028		
UL File Number	• E80017		
Color	• Natural Color		
Form(s)	• Pellets		
Processing Method	• Blow Molding • Extrusion • Extrusion Blow Molding	• Injection Blow Molding • Injection Molding • Multi Injection Molding	• Profile Extrusion • Sheet Extrusion
Revision Date	• 06/20/2014		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	1.24	1.24	ASTM D792
Density	1.24 g/cm³	1.24 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)	75	75	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	392 psi	2.70 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	392 psi	2.70 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	914 psi	6.30 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	914 psi	6.30 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	550 %	550 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	550 %	550 %	ISO 37

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Thermal	Typical Value (English)		Typical Value (SI)		Test Based On
RTI Elec	194	°F	90.0	°C	UL 746
RTI Str					UL 746
0.06 in (1.5 mm)	185	°F	85.0	°C	
0.12 in (3.0 mm)	194	°F	90.0	°C	

Electrical	Typical Value (English)		Typical Value (SI)		Test Based On
Dielectric Strength					ASTM D149
73°F (23°C), 0.0787 in (2.00 mm)	800	V/mil	31	kV/mm	
Dielectric Constant					ASTM D150
73°F (23°C), 0.0780 in (1.98 mm)	2.50		2.50		
Dielectric Constant					IEC 60250
73°F (23°C), 0.0780 in (1.98 mm)	2.50		2.50		
Comparative Tracking Index (CTI)	PLC 0		PLC 0		UL 746
High Amp Arc Ignition (HAI)	PLC 0		PLC 0		UL 746
High Voltage Arc Resistance to Ignition (HVAR)	PLC 6		PLC 6		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 3		PLC 3		UL 746

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	%
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.

Extrusion	Typical Value (English)		Typical Value (SI)	
Drying Temperature	180	°F	82	°C
Drying Time	3.0	hr	3.0	hr

Extrusion Notes

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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	-21 %	-21 %	
Change in Tensile Strength in Air			ISO 188
302°F (150°C), 168 hr	-21 %	-21 %	
Change in Ultimate Elongation in Air			ASTM D573
302°F (150°C), 168 hr	-25 %	-25 %	
Change in Tensile Strain at Break in Air			ISO 188
302°F (150°C), 168 hr	-25 %	-25 %	

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating			UL 94
0.04 in (1.0 mm)	V-2	V-2	
0.06 in (1.5 mm)	V-0	V-0	
0.12 in (3.0 mm)	V-0	V-0	
Oxygen Index	26 %	26 %	ASTM D2863
Oxygen Index	26 %	26 %	ISO 4589-2

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.

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. For detailed Product Stewardship information, please contact Customer Service.

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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 Safety Data Sheet, Injection Molding Guide and Extrusion 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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