ExxonMobil

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

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

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

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	

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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

Santoprene™ TPV is incompatible with acetal and PVC. For more information regarding processing and die design, please consult our Extrusion 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	-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	%	

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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