

Santoprene™ 251-70W232

Thermoplastic Vulcanizate

Product Description	Key Features
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 completely recyclable.	<ul style="list-style-type: none"> UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component. Recommended for applications requiring excellent flex fatigue resistance. Recommended for applications requiring excellent ozone resistance. EU and China RoHS compliant.

General			
Availability ¹	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific 	<ul style="list-style-type: none"> Europe Latin America 	<ul style="list-style-type: none"> North America South America
Applications	<ul style="list-style-type: none"> Automotive - Flame Retardant Connectors and Seals 	<ul style="list-style-type: none"> Electrical - Flame Retardant Connectors and Seals 	
Uses	<ul style="list-style-type: none"> Automotive Applications Cable Jacketing 	<ul style="list-style-type: none"> Flexible Cord Jacketing Wire & Cable Applications 	
Agency Ratings	<ul style="list-style-type: none"> EU 2003/11/EC 	<ul style="list-style-type: none"> UL QMFZ2 	<ul style="list-style-type: none"> UL QMFZ8
RoHS Compliance	<ul style="list-style-type: none"> RoHS Compliant 		
Color	<ul style="list-style-type: none"> Natural Color 		
Form(s)	<ul style="list-style-type: none"> Pellets 		
Processing Method	<ul style="list-style-type: none"> Blow Molding Extrusion Extrusion Blow Molding 	<ul style="list-style-type: none"> Injection Blow Molding Injection Molding Multi Injection Molding 	<ul style="list-style-type: none"> Profile Extrusion Sheet Extrusion
Revision Date	<ul style="list-style-type: none"> 12/16/2010 		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Specific Gravity	1.24	1.24	ASTM D792
Density	1.24 g/cm ³	1.24 g/cm ³	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)	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

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

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**ExxonMobil Chemical Santoprene™ 251-70W232
Thermoplastic Vulcanizate**

Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Dielectric Strength (0.0800 in (2.03 mm))	800 V/mil	31 kV/mm	ASTM D149
Dielectric Constant 73°F (23°C), 0.0780 in (1.98 mm)	2.50	2.50	ASTM D150
Dielectric Constant 73°F (23°C), 0.0780 in (1.98 mm)	2.50	2.50	IEC 60250

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 %
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/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	0.0010 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	82.2 °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 mold design, please consult our Extrusion Guide.

Aging	Typical Value (English)	Typical Value (SI)	Test Based On
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-21 %	-21 %	ASTM D573
Change in Tensile Strength in Air 302°F (150°C), 168 hr	-21 %	-21 %	ISO 188
Change in Ultimate Elongation in Air 302°F (150°C), 168 hr	-25 %	-25 %	ASTM D573
Change in Tensile Strain at Break in Air 302°F (150°C), 168 hr	-25 %	-25 %	ISO 188

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**ExxonMobil Chemical Santoprene™ 251-70W232
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Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating - UL			UL 94
0.0394 in (1.00 mm)	V-2	V-2	
0.0591 in (1.50 mm)	V-0	V-0	
0.118 in (3.00 mm)	V-0	V-0	
Oxygen Index	26 %	26 %	ASTM D2863
Oxygen Index	26 %	26 %	ISO 4589-2
UL File Number	E80017	E80017	

UL 746	Typical Value (English)	Typical Value (SI)	Test Based On
RTI Str			UL 746
0.0591 in (1.50 mm)	185 °F	85.0 °C	
0.118 in (3.00 mm)	194 °F	90.0 °C	
RTI Elec	194 °F	90.0 °C	UL 746
Comparative Tracking Index (CTI) (PLC)	PLC 0	PLC 0	UL 746
High Voltage Arc Tracking Rate (HVTR) (PLC)			UL 746
--	PLC 2	PLC 2	
Hot-wire Ignition (HWI) (PLC)	PLC 3	PLC 3	UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 0	PLC 0	UL 746
High Voltage Arc Resistance to Ignition (HVAR) (PLC)			UL 746
--	PLC 6	PLC 6	

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.

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, Injection Molding Guide, Extrusion Guide and Blow 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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