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 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]	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South 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	• EU 2003/11/EC	• UL QMFZ2	• UL QMFZ8
RoHS Compliance	• RoHS Compliant		
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	• 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/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), 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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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					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		

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/in²	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					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			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	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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