

Santoprene™ 151-70W256

Thermoplastic Vulcanizate

Product Description

A soft, black, flame retardant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material has been designed to meet the Underwriter Laboratories (UL) Subjects 6703, 6703A, 3730 and 1703 material requirements for both junction boxes and connectors (both enclosure and insulation) for use in photovoltaic systems. The flame retardants used are RoHS compliant and provide UL 94 flammability classifications of V-1 down to a thickness of 1.5 mm and 5VA down to a thickness of 1.8 mm. The material has an elevated Relative Thermal Index (RTI) of 90°C and meets the requirements for suitability for outdoor use with an (f1) rating. 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

- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- RTI of 90°C per UL 746B.
- Suitability for outdoor use (f1) rating per UL 746C.
- UL 94 V-1 flammability rating down to 1.5 mm.
- UL 94 5VA flammability rating down to 1.8 mm.
- UL 746A Inclined-Plane Tracking time of 107 min at 2.5 kV.

General

Uses	Outdoor Applications	
Agency Ratings	UL QMFZ2	UL QMFZ8
RoHS Compliance	RoHS Compliant	
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	1.26	1.26	ASTM D792
Density	1.26 g/cm ³	1.26 g/cm ³	ISO 1183
Outdoor Suitability	f1	f1	UL 746C

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))	334 psi	2.30 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	334 psi	2.30 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	696 psi	4.80 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	696 psi	4.80 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	480 %	480 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	480 %	480 %	ISO 37

Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
RTI Elec	194 °F	90.0 °C	UL 746
RTI Str	194 °F	90.0 °C	UL 746

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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)	720 V/mil	28 kV/mm	
Comparative Tracking Index (CTI)	PLC 1	PLC 1	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
Hot-wire Ignition (HWI)			UL 746
0.06 in (1.5 mm)	PLC 2	PLC 2	
0.07 in (1.8 mm)	PLC 2	PLC 2	
0.12 in (3.0 mm)	PLC 1	PLC 1	
Inclined-Plane Tracking (2.5 kV)	107 min	107 min	UL 746/ASTM D2303

Injection Notes

Santoprene™ TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating			UL 94
0.06 in (1.5 mm)	V-1	V-1	
0.07 in (1.8 mm)	• V-1	• V-1	
	• 5VA	• 5VA	
0.12 in (3.0 mm)	• V-1	• V-1	
	• 5VA	• 5VA	
Oxygen Index	24 %	24 %	ASTM D2863
Oxygen Index	24 %	24 %	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.

This product may be manufactured by a third party under contract with Exxon Mobil Corporation or one of its affiliates, pursuant to a quality management system which complies with the requirements of ISO 9001:2015.

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.