

SANTOPRENE® 151-70W256

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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 90C 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

Product information

Resin Identification	TPV	ISO 1043
Part Marking Code	>TPV<	ISO 11469

Typical mechanical properties

Tensile stress at 100% elongation, perpendicular	2.3 MPa	ISO 37
Stress at break, perpendicular	4.8 MPa	ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	480 %	ISO 527-1/-2 or ISO 37
Shore A hardness, 15s	75	ISO 48-4 / ISO 868

Thermal properties

RTI, electrical, 1.5mm	100 °C	UL 746B
RTI, electrical, 3.0mm	100 °C	UL 746B
RTI, impact, 1.5mm	95 °C	UL 746B
RTI, impact, 3.0mm	100 °C	UL 746B
RTI, strength, 1.5mm	95 °C	UL 746B
RTI, strength, 3.0mm	100 °C	UL 746B

Specific Application Suitability

Outdoor suitability	f1	UL 746C
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Flammability

Burning Behav. at 1.5mm nom. thickn.	V-1 class	IEC 60695-11-10
Thickness tested	1.5 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Burning Behav. 5V at thickness h	5VA class	IEC 60695-11-20
Thickness tested	1.8 mm	IEC 60695-11-20
UL recognition	yes	UL 94

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Oxygen index	24 %	ISO 4589-1/-2
Hot Wire Ignition, 1.5mm	PLC 2 s	UL 746A
Hot Wire Ignition, 3mm	PLC 1 s	UL 746A

Electrical properties

Arc Resistance Performance Level Category	PLC 6 class	UL 746B
High Amperage Arc Ignition Category, 1.5 mm	PLC 0 class	UL 746A

Physical/Other properties

Density	1260 kg/m ³	ISO 1183
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Additional information

Processing Notes

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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.