SANTOPRENE® 151-70W256

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

Typical mechanical properties

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

Thermal properties

RTI, electrical, 1.5mm	90	°C	UL 746B
RTI, strength, 1.5mm	90	°C	UL 746B

Specific Application Suitability

Outdoor suitability	f1	UL 746C

Flammability

Burning Behav. at thickness h	5VA	class	UL 94
Thickness tested	3	mm	UL 94
UL recognition	yes		UL 94
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

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Electrical properties

Comparative tracking index	PLC 1	PLC	UL 746A
Arc Resistance Performance Level Category	PLC 6	class	UL 746B
Electric Strength, Short Time, 2mm	28	kV/mm	ASTM D 149
High Amperage Arc Ignition Category, 1.5 mm	PLC 0	class	UL 746A

Other properties

Density	1260	kg/m^3	ISO 1183

Processing Texts

Processing Notes	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.

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