

SANTOPRENE™ 151-70W256 - TPV

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

Characteristics

Uses	Outdoor applications
Agency Ratings	UL QMFZ2, UL QMFZ8
UL File Number	E80017
Color	Black
Delivery Form	Pellets
Processing	Injection molding, Multi injection molding

Physical properties	Value	Unit	Test Standard
Density	78.7	lb/ft³	ASTM D792
Density	78.7	lb/ft³	ISO 1183
Outdoor suitability	f1	-	UL 746C

Hardness	Value	Unit
Shore A hardness-TPE, 15s	75	
		ISO 868

Mechanical properties	Value	Unit	Test Standard
Tensile stress at 100%, perpendicular	334	psi	ASTM D412
Tensile stress at 100%, perpendicular	334	psi	ISO 37
Tensile strength at break elast, perpendicular	696	psi	ASTM D412
Tensile stress at break, perpendicular	696	psi	ISO 37
Elongation at break elast, perpendicular	480	%	ASTM D412
Tensile strain at break, perpendicular	480	%	ISO 37

Thermal properties	Value	Unit	Test Standard
Limiting oxygen index (LOI)	24	%	ASTM D2863
Limiting oxygen index (LOI)	24	%	ISO 4589-1/-2
RTI Elec	194	°F	UL 746
RTI Str	194	°F	UL 746

SANTOPRENE™ 151-70W256 - TPV

Electrical properties	Value	Unit	Test Standard
Dielectric Strength, 2.0 mm	711	V/mil	ASTM D149
Comparative tracking index	PLC 1	-	UL 746
High amp arc ignition (HAI)	PLC 0	-	UL 746
High voltage arc resistance to ignition (HVAR)	PLC 6	-	UL 746
Hot-wire Ignition (1.5 mm)	PLC 2	-	UL 746A
Hot wire ignition (1.8 mm)	PLC 2	-	UL 746A
Hot-wire Ignition (3.0 mm)	PLC 1	-	UL 746A
Inclined-plane tracking, 2.5 kV	107	min	ASTM D2303 / UL 746

Flammability	Value	Unit
Flame rating, 1.5 mm	V-1	UL 94
Flame rating, 1.8 mm	V-1	UL 94
Flame rating, 3.0 mm	V-1	UL 94

Other text information

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.
