

SANTOPRENE™ 101-80 - TPV

Product Description

A soft, black, versatile thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material combines good physical properties and chemical resistance for use in a wide range of applications. This grade of Santoprene™ TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding, extrusion, blow molding, thermoforming or vacuum forming. 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; file #QMTT2.E86313, Polymeric Materials for Use in Wire, Cable and Flexible Lighting Products - Component
- Recommended for applications requiring excellent flex fatigue resistance
- Excellent ozone resistance

Characteristics

Applications	Automotive - Air Induction System Ducts, Automotive - Boots and Bellows for Steering and Suspension, Automotive - Plugs, Bumpers, Grommets, Clips, Automotive - Seals and Gaskets, Consumer - Electronics, Consumer - Floor Care, Industrial - Seals and Gaskets, Tubing
Uses	Appliance components, Automotive applications, Automotive under the hood, Consumer applications, Diaphragms, Electrical parts, Gaskets, Outdoor applications, Seals, Tubing
Agency Ratings	UL QMFZ2, UL QMFZ8, UL QMTT2
UL File Number	E80017, E86313
Color	Black
Delivery Form	Pellets
Processing	Blow molding, Coextrusion, Extrusion, Extrusion blow molding, Injection blow molding, Injection molding, Multi injection molding, Profile extrusion, Sheet extrusion, Thermoforming, Vacuum forming

Physical properties		Value	Unit	Test Standard
Density		0.96	g/cm ³	ASTM D792
Density		960	kg/m ³	ISO 1183
Outdoor suitability	f1	-	-	UL 746C
Detergent resistance	f3	-	-	UL 749
Detergent resistance	f4	-	-	UL 2157

Hardness		Value	Unit	
Shore A hardness-TPE, 15s		87		ISO 868

Mechanical properties		Value	Unit	Test Standard
Tensile stress at 100%, perpendicular		4.61	MPa	ASTM D412
Tensile stress at 100%, perpendicular		4.61	MPa	ISO 37
Tensile strength at break elast, perpendicular		10.4	MPa	ASTM D412
Tensile stress at break, perpendicular		10.4	MPa	ISO 37
Elongation at break elast, perpendicular		526	%	ASTM D412
Tensile strain at break, perpendicular		526	%	ISO 37
Tear strength, Method Ba, perpendicular		33	kN/m	ISO 34-1
Compression set, 70 °C, 22h, Type 1, Method B		36	%	ASTM D395
Compression set, 70 °C, 22h, Type A		36	%	ISO 815
Compression set, 125 °C, 70h, Type 1, Method B		52	%	ASTM D395
Compression set, 125 °C, 70h, Type A		52	%	ISO 815

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Thermal properties	Value	Unit	Test Standard
Brittleness temperature	-60	°C	ASTM D746
RTI Elec	90	°C	UL 746
RTI Str, 1.0 mm	90	°C	UL 746
RTI Str, 1.5 mm	90	°C	UL 746
RTI Str, 3.0 mm	95	°C	UL 746
Electrical properties	Value	Unit	Test Standard
Dielectric Strength, 2.0 mm	30	kV/mm	ASTM D149
Dielectric Constant 60Hz, 1.98 mm	2.6	-	ASTM D150
Dielectric Constant 60Hz, 1.98 mm	2.6	-	IEC 60250
Comparative tracking index	PLC 0	-	UL 746
High amp arc ignition (HAI)	PLC 0	-	UL 746
High voltage arc resistance to ignition (HVAR)	PLC 6	-	UL 746
High voltage arc tracking rate (HVTR)	PLC 1	-	UL 746
Hot-wire Ignition (1.0 mm)	PLC 4	-	UL 746A
Hot-wire Ignition (1.5 mm)	PLC 3	-	UL 746A
Hot-wire Ignition (3.0 mm)	PLC 2	-	UL 746A
Injection	Value	Unit	
Drying temperature	82	°C	
Drying time	3	h	
Necessary low maximum residual moisture content	0.08	%	
Suggested maximum regrind	20	%	
Rear temperature	177	°C	
Middle temperature	182	°C	
Front temperature	188	°C	
Nozzle temperature	193 - 232	°C	
Melt temperature	199 - 232	°C	
Mold temperature	10 - 52	°C	
Injection speed	fast	-	
Back pressure	0.345 - 0.689	MPa	
Screw Speed	100 - 200	RPM	
Clamp tonnage	41 - 69	MPa	
Cushion	3.18 - 6.35	mm	
Screw L/D	20:1/*	-	
Screw compression ratio	2.5:1/*	-	
Vent depth	0.025	mm	
Extrusion	Value	Unit	
Drying temperature	82	°C	
Drying time	3	h	
Melt temperature	202	°C	
Die head temperature	204	°C	
Back pressure	5 - 20	MPa	
Aging	Value	Unit	Test Standard
Change in Tensile Strength in Air @ 150 C, 168 h	-5.8	%	ASTM D573
Change in Tensile Strength in Air @ 150 C, 168 h	-5.8	%	ISO 188
Change in Ultimate Elongation in Air @ 150 C, 168 h	-12	%	ASTM D573
Change in Tensile Strain at Break in Air @ 150 C, 168 h	-12	%	ISO 188
Change in Durometer Hardness in Air @ 150 C, 168 h, Shore A	1.7	-	ASTM D573
Change in Shore Hardness in Air @ 150 C, 168 h, Shore A	1.7	-	ISO 188
Continuous Upper Temperature Resistance (CUTR) @ 1008 h	135	°C	SAE J2236
Flammability	Value	Unit	
Flame rating, 1.0 mm	HB		UL 94
Flame rating, 1.5 mm	HB		UL 94
Flame rating, 3.0 mm	HB		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.

Other Approvals

OEM	Specification
Chrysler (FCA)	MS-AR-100 DGN
FORD	WSD-M2D381-A1
GM	GMW15813, Type 7
Fiat	55248_02 EMP90
DBL Mercedes Benz	DBL5562
Renault	FRM 18-27-056 /---
Renault	FRM 18-27--703 /---
Renault	PMR2021 (UB16b)
Hyundai	MS220-05 Type D
VW	VW50123

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