



SANTOPRENE® 101-87

SANTOPRENE®

A hard, 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

Product information

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Resin Identification	TPV		ISO 1043
Part Marking Code	>TPV<		ISO 11469
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Rheological properties			
Moulding shrinkage, parallel	1.5 ^[1]	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 ^[1]	%	ISO 294-4, 2577
[1]: 2.0 mm thickness, min. 24 hours after molding, per test method T	PE-X0080		
Typical mechanical properties			
Tensile stress at 100% elongation, perpendicular	6.93	MPa	ISO 37
Tensile stress at break, perpendicular	15.6		ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	597		ISO 527-1/-2 or ISO 37
Brittleness Temperature	-54		ASTM D 746
Low temperature brittleness	-54	°C	ISO 812
Shore A hardness, 15s	94		ISO 48-4 / ISO 868
Compression set, 70 °C, 24h	37	%	ISO 815
Compression set, 125°C, 70h	52	%	ISO 815
Tear strength, normal	51	kN/m	ISO 34-1
Thermal properties			
RTI, electrical, 1.5mm	90	°C	UL 746B
RTI, electrical, 3.0mm	90		UL 746B
RTI, strength, 1.5mm	90	°C	UL 746B
RTI, strength, 3.0mm	95	°C	UL 746B
Specific Application Suitability			
Continuous Upper Temperature Resistance, 1000h	135	°C	SAE J2236
Detergent resistance	f3	-	UL 749
Detergent resistance	f4		UL 2157
Outdoor suitability	f1		UL 746C
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Flammability

Burning Behav. at 1.5mm nom. thickn.	НВ	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	1	mm	IEC 60695-11-10
UL recognition	yes		UL 94
FMVSS Class	В		ISO 3795 (FMVSS 302)
Burning rate, Thickness 2 mm	21	mm/min	ISO 3795 (FMVSS 302)
Hot Wire Ignition, 1.5mm	PLC 3	S	UL 746A
Hot Wire Ignition, 3mm	PLC 2	S	UL 746A

Electrical properties

Relative permittivity, 60Hz	2.6	IEC 62631-2-1
Comparative tracking index, 23°C	0 PLC	UL 746A
Arc Resistance Performance Level Category	PLC 5 class	UL 746B
High Amperage Arc Ignition Category, 1.5 mm	PLC 0 class	UL 746A

Physical/Other properties

Density	950 kg/m ³	ISO 1183
Deligity	330 Kg/III	100 110

Injection

Drying Recommended	yes
Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	≥3 h
Processing Moisture Content	≤0.08 %
Max. regrind level	20 %
Melt Temperature Optimum	220 °C
Min. melt temperature	205 °C
Max. melt temperature	230 °C
Mold Temperature Optimum	30 °C
Min. mould temperature	10 °C
Max. mould temperature	50 °C

Extrusion

Drying Temperature	82 °C
Drying Time, Dehumidified Dryer	3 h
Melt Temperature Range	204 °C

Characteristics

Processing Injection Moulding, Multi Injection Moulding, Extrusion, Sheet Extrusion,

Coextrusion, Blow Moulding, Thermoforming

Delivery form Pellets

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Additional information

Non Standard Data

Property Name	Condition	Value	Unit	Standard
Change in Tensile Strength	150°C, 168h	-10.9	%	ISO 188
Change in Tensile Strain at Break	150°C, 168h	-18	%	ISO 188
Change in Shore A Hardness	150°C, 168h	0.9	-	ISO 188

Injection molding Holding pressure should be about 50 to 75% of the actual injection pressure.

A high screw RPM (100 to 200) is recommended.

Back pressure is not always needed, however, a back pressure of 0.3 to 0.7 MPa may be used to ensure a homogeneous melt and maintain a consistent shot size. A higher back pressure is normally employed when using masterbatches.

Processing Notes 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.

Santoprene® TPV has a relatively high melt viscosity at low shear rates. Viscosity decreases as the shear rate increases.

Increasing temperature has little effect on TPV melt viscosity. Smaller gates and higher shear rates keep melt viscosity low and improve melt flow. Please also refer to the injection molding guide.

N/A

Automotive

OEM STANDARD ADDITIONAL INFORMATION

BMW GS93042

Ford WSD-M2D382-A1

General Motors GMW15813P-TPV-(EPDM+PP)-Type 8

Hyundai MS220-05 Type E

Mercedes-Benz DBL5562

Renault FRM 18-27-135 /---, No Spec, Special Part

Approval, See Your CE Account Manager.

Renault UB02b, PMR2021, No Spec, Special Part

Approval, See Your CE Account Manager.

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Stellantis

Renault UB16b, PMR2021, No Spec, Special Part

Approval, See Your CE Account Manager.

Renault UM09g, PMR2021, No Spec, Special Part

Approval, See Your CE Account Manager.

Stellantis B62 0300 / CPN2868;B63 0300 / 01378_23_00031;B62 61/215E/213M/H412/13/C1B/J7/M5/Q3/R3/Z5 0300 / 01994 10 00139;MS-AR-100

0300 / 01994_10_00139;MS-AR-100 EGN;Coolant hose celanese TPV1hose-125

> 0300 / 01994_10_00139;MS-AR-100 EGN;Coolant hose celanese TPV1hose-125

VW Group VW 50123

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