

## SANTOPRENE™ 203-50 - TPV

### Product Description

A hard, colorable, 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.
- Excellent ozone resistance.

### Characteristics

<b>Applications</b>	General Purpose
<b>Uses</b>	Appliance components, Automotive applications, Automotive under the hood, Consumer applications, Diaphragms, Electrical parts, Living hinges, Tubing
<b>Agency Ratings</b>	UL QMFZ2, UL QMFZ8
<b>UL File Number</b>	E80017
<b>Color</b>	Natural color
<b>Delivery Form</b>	Pellets
<b>Processing</b>	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	0.95	g/cm <sup>3</sup>	ASTM D792
Density	950	kg/m <sup>3</sup>	ISO 1183
Detergent resistance	f3	-	UL 749
Detergent resistance	f4	-	UL 2157

Hardness	Value	Unit	Test Standard
Shore D hardness-TPE, 15s	51		ISO 868

Mechanical properties	Value	Unit	Test Standard
Tensile strength at yield, perpendicular	12	MPa	ASTM D638
Tensile stress at yield, perpendicular	12	MPa	ISO 527-2
Tensile elongation at yield, perpendicular	31	%	ASTM D638
Tensile strain at yield, perpendicular	31	%	ISO 527-2
Tear strength, Method Ba, perpendicular	96	kN/m	ISO 34-1
Compression set, 70 °C, 22h, Type 1, Method B	59	%	ASTM D395
Compression set, 70 °C, 22h, Type A	59	%	ISO 815
Compression set, 125 °C, 70h, Type 1, Method B	74	%	ASTM D395
Compression set, 125 °C, 70h, Type A	74	%	ISO 815

Thermal properties	Value	Unit	Test Standard
Brittleness temperature	-28	°C	ASTM D746
RTI Elec	85	°C	UL 746
RTI Str	85	°C	UL 746

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Electrical properties	Value	Unit	Test Standard
Dielectric Strength, 2.0 mm	35	kV/mm	ASTM D149
Dielectric Constant 60Hz, 1.98 mm	2.3	-	ASTM D150
Dielectric Constant 60Hz, 1.98 mm	2.3	-	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 5	-	UL 746
High voltage arc tracking rate (HVTR)	PLC 1	-	UL 746
Hot-wire Ignition (1.0 mm)	PLC 3	-	UL 746A
Hot-wire Ignition (1.5 mm)	PLC 3	-	UL 746A
Hot-wire Ignition (3.0 mm)	PLC 1	-	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	193	°C
Middle temperature	199	°C
Front temperature	204	°C
Nozzle temperature	210 - 241	°C
Melt temperature	216 - 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	210	°C
Die head temperature	216	°C
Back pressure	5 - 20	MPa

Aging	Value	Unit	Test Standard
Change in Tensile Strength in Air @ 150 C, 168 h	-32	%	ASTM D573
Change in Tensile Strength in Air @ 150 C, 168 h	-32	%	ISO 188
Change in Ultimate Elongation in Air @ 150 C, 168 h	-27	%	ASTM D573
Change in Tensile Strain at Break in Air @ 150 C, 168 h	-27	%	ISO 188
Change in Durometer Hardness in Air @ 150 C, 168 h, Shore D	5	-	ASTM D573
Change in Shore Hardness in Air @ 150 C, 168 h, Shore D	5	-	ISO 188

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**

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OEM	Specification
VW	VW50123

**Contact**

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**General Disclaimer**

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