

SANTOPRENE™ 101-87 - TPV

Product Description

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.

Characteristics

Applications	Appliance - Feet, 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 - Feet
Uses	Appliance components, Automotive applications, Automotive under the hood, Consumer applications, Diaphragms, Electrical parts, Living hinges, Outdoor applications, 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	0.95	g/cm ³	ASTM D792
Density	950	kg/m ³	ISO 1183
Outdoor suitability	f1	-	UL 746C
Detergent resistance	f3	-	UL 749
Detergent resistance	f4	-	UL 2157

Hardness	Value	Unit	Test Standard
Shore A hardness-TPE, 15s	94		ISO 868

Mechanical properties	Value	Unit	Test Standard
Tensile stress at 100%, perpendicular	6.93	MPa	ASTM D412
Tensile stress at 100%, perpendicular	6.93	MPa	ISO 37
Tensile strength at break elast, perpendicular	15.6	MPa	ASTM D412
Tensile stress at break, perpendicular	15.6	MPa	ISO 37
Elongation at break elast, perpendicular	597	%	ASTM D412
Tensile strain at break, perpendicular	597	%	ISO 37
Tear strength, Method Ba, perpendicular	51	kN/m	ISO 34-1
Compression set, 70 °C, 22h, Type 1, Method B	37	%	ASTM D395
Compression set, 70 °C, 22h, Type A	37	%	ISO 815
Compression set, 125 °C, 70h, Type 1, Method B	52	%	ASTM D395
Compression set, 125 °C, 70h, Type A	52	%	ISO 815

Thermal properties	Value	Unit	Test Standard
Brittleness temperature	-54	°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

SANTOPRENE™ 101-87 - TPV

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 5	-	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	182	°C
Middle temperature	188	°C
Front temperature	193	°C
Nozzle temperature	199 - 235	°C
Melt temperature	204 - 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	204	°C
Die head temperature	210	°C
Back pressure	5 - 20	MPa

Aging	Value	Unit	Test Standard
Change in Tensile Strength in Air @ 150 C, 168 h	-10.9	%	ASTM D573
Change in Tensile Strength in Air @ 150 C, 168 h	-10.9	%	ISO 188
Change in Ultimate Elongation in Air @ 150 C, 168 h	-18	%	ASTM D573
Change in Tensile Strain at Break in Air @ 150 C, 168 h	-18	%	ISO 188
Change in Durometer Hardness in Air @ 150 C, 168 h, Shore A	0.9	-	ASTM D573
Change in Shore Hardness in Air @ 150 C, 168 h, Shore A	0.9	-	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 EGN
FORD	WSD-M2D382-A1
GM	GMW15813, Type 8

Contact

Americas

8040 Dixie Highway
Florence, KY 41042 USA
Product Information Service
t: +1-800-833-4882
t: +1-859-372-3244
Customer Service
t: +1-800-526-4960
t: +1-859-372-3214
e: info-engineeredmaterials-am@celanese.com

Asia

4560 Jinke Road
Zhang Jiang Hi Tech Park
Shanghai 201210 PRC
Customer Service
t: +86 21 3861 9288
e: info-engineeredmaterials-asia@celanese.com

Europe

Am Unisys-Park 1
65843 Sulzbach, Germany
Product Information Service
t: +49-800-86427-531
t: +49-(0)-69-45009-1011
e: info-engineeredmaterials-eu@celanese.com

General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

Trademark

© 2021 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.