

# SANTOPRENE® 103-50

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
- Excellent ozone resistance

## Typical mechanical properties

Yield stress, perpendicular	12 MPa	ISO 527-1/-2 or ISO 37
Yield strain, perpendicular	31 %	ISO 527-1/-2 or ISO 37
Shear Modulus	146 MPa	ISO 6721
Brittleness Temperature	-41 °C	ASTM D 746
Low temperature brittleness	-41 °C	ISO 812
Shore D hardness, 15s	51	ISO 48-4 / ISO 868
Shore D hardness, 168h at 150°C	5	ISO 48-4 / ISO 868
Compression set at 70°C, 24h	59 %	ISO 815
Compression Set, 125°C, 70h	74 %	ISO 815
Tear strength, normal	93 kN/m	ISO 34-1

## Thermal properties

RTI, electrical, 1.5mm	85 °C	UL 746B
RTI, strength, 1.5mm	85 °C	UL 746B

## Specific Application Suitability

Detergent resistance	f3	UL 749
Detergent resistance	f4	UL 2157

## Flammability

Burning Behav. at thickness h	HB class	UL 94
Thickness tested	3 mm	UL 94
UL recognition	yes	UL 94
Hot Wire Ignition, 1.5mm	PLC 3 s	UL 746A

## Electrical properties

Comparative tracking index	PLC 0 PLC	UL 746A
Arc Resistance Performance Level Category	PLC 5 class	UL 746B
Electric Strength, Short Time, 2mm	31 kV/mm	ASTM D 149
High Amperage Arc Ignition Category, 1.5 mm	PLC 0 class	UL 746A
High Voltage Arc Tracking Rate	PLC 1 mm/min	UL 746A

# SANTOPRENE® 103-50

## Other properties

Density 950 kg/m<sup>3</sup> ISO 1183

## Injection

Drying Temperature	82 °C	
Drying Time, Dehumidified Dryer	3 h	
Processing Moisture Content	0.08 %	
Max. regrind level	20 %	
Melt Temperature Optimum	215 °C	Internal
Max. mould temperature	10 - 52 °C	
Vent depth	25 µm	
Back pressure	0.345 - 0.689 MPa	
Injection speed	fast	

## Extrusion

Drying Temperature	82 °C
Drying Time, Dehumidified Dryer	3 h
Melt Temperature Range	210 °C

## Processing Texts

### 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

### Other Approvals

OEM	Specification
GM	GMW15813, Type 10
Stellantis - Chrysler	MS-AR-100 GGN
Stellantis - PSA Group	PMP 01994_10_00137
Mercedes-Benz Group (Daimler)	DBL 5562
Hyundai	MS220-05, Type H
Renault	FRM 18-27-034 /--B
VW Group	VW50123

# SANTOPRENE® 103-50

Printed: 2023-08-08

Page: 3 of 3

Revised: 2023-06-26 Source: Celanese Materials Database

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. Colourants or other additives may cause significant variations in data values. Properties of moulded 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. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, 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.

© 2023 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. KEPITAL is a registered trademark of Korea Engineering Plastics Company, Ltd.