Santoprene™ TPV
121-73W175

Product Description	Key Features
A soft, black, UV resistant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material combines good physical properties and chemical resistance, and is designed for thin wall or complex profile extrusion applications. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for extrusion, thermoforming or vacuum forming. It is polyolefin based and completely recyclable.	• Recommended for applications requiring excellent flex fatigue resistance. • Excellent ozone resistance. • Designed for improved UV resistance. • Compliant to EU Directive 2003/11/EC regarding marketing and use of certain dangerous substances and preparations, specifically pentabromodiphenyl ether or octabromodiphenyl ether. • EU Directive 2002/95/EC (RoHS) compliant. • Designed for extruding thin sections with excellent definition (down to 0.33 mm [0.013"] radius). Long runs with minimal build-up of material on screen packs or narrow die sections.

General			
Availability [1]	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South America
Applications	• Automotive - Seals and Gaskets	• Automotive - Weather Seals	
Uses	• Automotive Applications	• Automotive Exterior Trim	
Agency Ratings	• EU 2003/11/EC		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-AR100 CGV	• FORD WSS-M2D380-B1	• GM GMP.E/P.057
Color	• Black		
Forms	• Pellets		
Processing Method	• Coextrusion • Extrusion	• Profile Extrusion • Sheet Extrusion	• Thermoforming • Vacuum Forming
Revision Date	• 03/22/2006		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Specific Gravity	0.970	0.970	ASTM D792
Density	0.970 g/cm³	0.970 g/cm³	ISO 1183

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 0.0787 in (2.00 mm), 73.4 °F (23.0 °C)	78	78	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73.0 °F (22.8 °C))	510 psi	3.52 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73 °F (23 °C))	508 psi	3.50 MPa	ISO 37
Tensile Strength at Break - Across Flow (73 °F (23 °C))	1280 psi	8.83 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73 °F (23 °C))	1280 psi	8.80 MPa	ISO 37
Elongation at Break - Across Flow (73.0 °F (22.8 °C))	460 %	460 %	ASTM D412

Typical properties: these are not to be construed as specifications.

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Strain at Break - Across Flow (73 °F (23 °C))	460 %	460 %	ISO 37
Tear Strength - Across Flow (73 °F (23 °C), Die C)	140 lbf/in	24 kN/m	ASTM D624
Tear Strength - Across Flow [2] (73 °F (23 °C))	140 lbf/in	24 kN/m	ISO 34-1
Compression Set [3]			ASTM D395
158 °F (70 °C), 22.0 hr	33 %	33 %	
257 °F (125 °C), 70.0 hr	42 %	42 %	
Compression Set [4]			ISO 815
158 °F (70 °C), 22.0 hr	33 %	33 %	
257 °F (125 °C), 70.0 hr	42 %	42 %	

Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
Brittleness Temperature	-76 °F	-60 °C	ASTM D746
Brittleness Temperature	-76 °F	-60 °C	ISO 812

Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Dielectric Strength (0.0800 in (2.03 mm))	760 V/mil	29.9 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
73 °F (23 °C), 0.0780 in (1.98 mm)	2.700	2.700	
Dielectric Constant			IEC 60250
73.4 °F (23.0 °C), 0.0780 in (1.98 mm)	2.700	2.700	

Extrusion	Typical Value (English)	Typical Value (SI)
Drying Temperature	180 °F	82.2 °C
Drying Time	3.0 hr	3.0 hr
Melt Temperature	350 to 400 °F	177 to 204 °C
Die Temperature	400 °F	204 °C
Back Pressure	725 to 2900 psi	5.00 to 20.0 MPa

Extrusion Notes

Santoprene TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Extrusion Guide.

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Aging	Typical Value (English)	Typical Value (SI)	Test Based On
Change in Tensile Strength in Air			ASTM D573
302 °F (150 °C), 168 hr	-9.0 %	-9.0 %	
Change in Tensile Strength in Air			ISO 188
302 °F (150 °C), 168 hr	-9.0 %	-9.0 %	
Change in Ultimate Elongation in Air			ASTM D573
302 °F (150 °C), 168 hr	-2.0 %	-2.0 %	
Change in Tensile Strain at Break in Air			ISO 188
302 °F (150 °C), 168 hr	-2.0 %	-2.0 %	
Change in Durometer Hardness in Air - Shore A			ASTM D573
302 °F (150 °C), 168 hr	5.0	5.0	
Change in Shore Hardness in Air - Shore A			ISO 188
302 °F (150 °C), 168 hr	5.0	5.0	
Continuous Upper Temperature Resistance			SAE J2236
1008 hr	275 °F	135 °C	

Additional Properties

Values are for injection molded plaques, fan-gated, 102.0 mm x 152.0 mm x 2.0 mm (4.000" x 6.000" x 0.080").
Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C.
Compression set at 25% deflection.

Processing Statement

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. Do not exceed 15% drawdown. For more information, please consult our Material Safety Data Sheet and Extrusion Guide.

Medical Use Statement

This product, including the product name, shall not be used or tested in any medical, healthcare or personal care application without the prior written acknowledgement of ExxonMobil Chemical as to the intended use.

Notes

[1] Product may not be available in one or more countries in the identified Availability regions. Contact your Sales Representative for complete Country Availability.

[2] Method Bb, Angle (Nicked)

[3] Type 1

[4] Type A

For additional technical, sales and order assistance:

EXXONMOBIL CHEMICAL COMPANY
388 S. Main Street
Akron, OH 44311-1065

U.S. AnswerPerson(SM):	800.305.8070 option 2
North America AnswerPerson(SM):	330.849.5272
Europe AnswerPerson(SM):	32.2.706.3511
Japan AnswerPerson(SM):	81.44.288.9920
Asia-Pacific AnswerPerson(SM):	65.9677.6704
PRC/HK/Taiwan AnswerPerson(SM):	800.6773.1616

www.santoprene.com/answer

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