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Santoprene™ 121-58W175

Thermoplastic Vulcanizate

Product Description

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. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- Recommended for applications requiring excellent flex fatigue resistance.
- Excellent ozone resistance.
- Designed for improved UV resistance.
- Designed for extruding thin wall sections with excellent definition (down to 0.33 mm [0.013"] radius) and to maximize run length with minimal build-up of material on screen packs or narrow sections of dies.

General

Availability [1]	▪ Africa & Middle East ▪ Asia Pacific	▪ Europe ▪ Latin America	▪ North America
Applications	▪ Automotive - Weather Seals		
Uses	▪ Automotive Applications	▪ Automotive Exterior Trim	▪ Outdoor Applications
RoHS Compliance	▪ RoHS Compliant		
Automotive Specifications	▪ CHRYSLER MS-AR-100 AGV	▪ FORD WSS-M2D378-B1	▪ GM GMW15812, Type 4E
Color	▪ Black		
Form(s)	▪ Pellets		
Processing Method	▪ Extrusion	▪ Profile Extrusion	▪ Sheet Extrusion
Revision Date	▪ 01/25/2019		

Physical	Typical Value (English)		Typical Value (SI)		Test Based On
Density / 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, 15 sec, 73°F (23°C)	61		61		

Elastomers	Typical Value (English)		Typical Value (SI)		Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	289	psi	1.99	MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	289	psi	1.99	MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	738	psi	5.09	MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	738	psi	5.09	MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	460	%	460	%	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	460	%	460	%	ISO 37
Tear Strength - Across Flow					ISO 34-1
73°F (23°C), Method Ba, Angle (Unnicked)	118	lbf/in	20.6	kN/m	
Compression Set					ASTM D395B
158°F (70°C), 22 hr, Type 1	27	%	27	%	
257°F (125°C), 70 hr, Type 1	43	%	43	%	
Compression Set					ISO 815
158°F (70°C), 22 hr, Type A	27	%	27	%	
257°F (125°C), 70 hr, Type A	43	%	43	%	

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

ExxonMobil

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Electrical	Typical Value (English)		Typical Value (SI)		Test Based On
Dielectric Strength					ASTM D149
73°F (23°C), 0.0787 in (2.00 mm)	650	V/mil	26	kV/mm	
Dielectric Constant					ASTM D150
73°F (23°C), 0.0760 in (1.93 mm)	2.70		2.70		
Dielectric Constant					IEC 60250
73°F (23°C), 0.0760 in (1.93 mm)	2.70		2.70		

Extrusion	Typical Value (English)		Typical Value (SI)	
Drying Temperature	180	°F	82	°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 die design, please consult our Extrusion Molding Guide.

Aging	Typical Value (English)		Typical Value (SI)		Test Based On
Change in Tensile Strength in Air					ASTM D573
302°F (150°C), 168 hr	-21	%	-21	%	
Change in Tensile Strength in Air					ISO 188
302°F (150°C), 168 hr	-21	%	-21	%	
Change in Ultimate Elongation in Air					ASTM D573
302°F (150°C), 168 hr	7.7	%	7.7	%	
Change in Tensile Strain at Break in Air					ISO 188
302°F (150°C), 168 hr	7.7	%	7.7	%	
Change in Durometer Hardness in Air					ASTM D573
Shore A, 302°F (150°C), 168 hr	-3.0		-3.0		
Change in Shore Hardness in Air					ISO 188
Shore A, 302°F (150°C), 168 hr	-3.0		-3.0		
Continuous Upper Temperature Resistance					SAE J2236
1008 hr	275	°F	135	°C	

Additional Information

Where applicable, test results based on fan gated, 2.0 mm injection molded plaques. Tensile strength, elongation and tensile stress are measured across the flow direction. Test results are generated by ExxonMobil test methods that may not fully conform to the ASTM and/or ISO methods. Test methods are available upon request. Compression set at 25% deflection. All products purchased directly from an ExxonMobil affiliate in Europe are REACH compliant. For products not imported into Europe by ExxonMobil, customers should assess their legal responsibilities under REACH.

Legal Statement

For detailed Product Stewardship information, please contact Customer Service.

This product, including the product name, shall not be used or tested in any medical application without the prior written acknowledgement of ExxonMobil Chemical as to the intended use. For detailed Product Stewardship information, please contact Customer Service.

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 Safety Data Sheet and Extrusion Guide.

Notes

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

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

For additional technical, sales and order assistance: www.exxonmobilchemical.com/ContactUs

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