Santoprene™ 201-64

Thermoplastic Vulcanizate

ExxonMobil Chemical

IDES | Prospector

Product Description

A soft, 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 or blow molding. It is polyolefin based and completely recyclable.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South America
Features	• Electrically Insulating • Fatigue Resistant • Good Chemical Resistance • Good Colorability	• Good Creep Resistance • Good Dimensional Stability • Good Electrical Properties • Good Heat Aging Resistance	• Low Compression Set • Ozone Resistant • Recyclable Material
Uses	• Appliance Components • Automotive Applications • Automotive Interior Trim • Automotive Under the Hood	• Consumer Applications • Diaphrams • Electrical Parts • Gaskets	• Seals • Tubing
Agency Ratings	• EU 2003/11/EC	• UL QMFZ2	• UL QMFZ8
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Blow Molding • Coextrusion • Extrusion	• Extrusion Blow Molding • Injection Blow Molding • Injection Molding	• Multi Injection Molding • Profile Extrusion • Sheet Extrusion

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity			
--	0.970	0.968 g/cm³	ASTM D792
--	0.970 g/cm³	0.970 g/cm³	ISO 1183
Elastomers	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Stress - Across Flow (100% Strain, 73°F (23°C))	377 psi	2.60 MPa	ASTM D412 ISO 37
Tensile Strength - Across Flow (Break, 73°F (23°C))	1020 psi	7.00 MPa	ASTM D412 ISO 37
Tensile Elongation - Across Flow (Break, 73°F (23°C))	450 %	450 %	ASTM D412 ISO 37
Tear Strength - Across Flow			
73°F (23°C) [2]	131 lbf/in	23.0 kN/m	ASTM D624
73°F (23°C) [3]	130 lbf/in	23 kN/m	ISO 34-1
Compression Set			
158°F (70°C), 22.0 hr [4]	18 %	18 %	ASTM D395B
257°F (125°C), 70.0 hr [4]	44 %	44 %	ASTM D395B
158°F (70°C), 22.0 hr [5]	18 %	18 %	ISO 815
257°F (125°C), 70.0 hr [5]	44 %	44 %	ISO 815
Hardness	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C), 0.0787 in (2.00 mm)	69	69	
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Brittleness Temperature	-76.0 °F	-60.0 °C	ASTM D746 ISO 812

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Aging	Nominal Value (English)	Nominal Value (SI)	Test Method
Change in Tensile Strength in Air			ASTM D573 ISO 188
302°F (150°C), 168 hr	-12 %	-12 %	
Change in Ultimate Elongation in Air			ASTM D573 ISO 188
302°F (150°C), 168 hr	6.0 %	6.0 %	
Change in Durometer Hardness in Air			ASTM D573 ISO 188
Shore A, 302°F (150°C), 168 hr	2.0	2.0	
Change in Tensile Strength			ASTM D471 ISO 1817
257°F (125°C), 70 hr, in IRM 903 Oil	-30 %	-30 %	
257°F (125°C), 168 hr, in ASTM #1 Oil	-21 %	-21 %	
257°F (125°C), 1000 hr, in Antifreeze, 50/50 V/V/Water	-7.0 %	-7.0 %	
Change in Ultimate Elongation			ASTM D471 ISO 1817
257°F (125°C), 70 hr, in IRM 903 Oil	-49 %	-49 %	
257°F (125°C), 168 hr, in ASTM #1 Oil	-35 %	-35 %	
257°F (125°C), 1000 hr, in Antifreeze, 50/50 V/V/Water	-21 %	-21 %	
Change in Durometer Hardness			ASTM D471 ISO 1817
Shore A, 257°F (125°C), 70 hr, in IRM 903 Oil	-20	-20	
Shore A, 257°F (125°C), 168 hr, in ASTM #1 Oil	-14	-14	
Shore A, 257°F (125°C), 1000 hr, in Antifreeze, 50/50 V/V/Water	-4.0	-4.0	
Change in Mass			ASTM D471
250°F (121°C), 168 hr, in Automatic Transmission Fluid	72 %	72 %	
257°F (125°C), 168 hr, in ASTM #1 Oil	39 %	39 %	
257°F (125°C), 1000 hr, in Antifreeze, 50/50 V/V/Water	13 %	13 %	
Change in Mass			ISO 1817
257°F (125°C), 1000 hr, in Antifreeze, 50/50 V/V/Water	13 %	13 %	
257°F (125°C), 168 hr, in ASTM #1 Oil	39 %	39 %	
250°F (121°C), 168 hr, in Automatic Transmission Fluid	72 %	72 %	
Change in Volume			ASTM D471 ISO 1817
257°F (125°C), 70 hr, in IRM 903 Oil	87 %	87 %	
Continuous Upper Temperature Resistance	275 °F	135 °C	SAE J2236

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Dielectric Strength (0.0800 in (2.03 mm))	840 V/mil	33 kV/mm	ASTM D149
Dielectric Constant			ASTM D150 IEC 60250
73°F (23°C), 0.0780 in (1.98 mm)	2.30	2.30	

Additional Information

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.

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.

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Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	180 °F	82.2 °C
Drying Time	3.0 hr	3.0 hr
Suggested Max Moisture	0.080 %	0.080 %
Suggested Max Regrind	20 %	20 %
Rear Temperature	350 °F	177 °C
Middle Temperature	360 °F	182 °C
Front Temperature	360 °F	182 °C
Nozzle Temperature	370 to 430 °F	188 to 221 °C
Processing (Melt) Temp	380 to 450 °F	193 to 232 °C
Mold Temperature	50.0 to 125 °F	10.0 to 51.7 °C
Injection Rate	Fast	Fast
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	100 to 200 rpm	100 to 200 rpm
Clamp Tonnage	3.0 to 5.0 tons/in²	4.1 to 6.9 kN/cm²
Cushion	0.125 to 0.250 in	3.18 to 6.35 mm
Screw L/D Ratio	16.0:1.0 to 20.0:1.0	16.0:1.0 to 20.0:1.0
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	2.0:1.0 to 2.5:1.0
Vent Depth	0.0010 in	0.025 mm

Injection Notes

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

Extrusion	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	180 °F	82.2 °C
Drying Time	3.0 hr	3.0 hr
Melt Temperature	385 °F	196 °C
Die Temperature	390 °F	199 °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.

Notes

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

[2] Die C

[3] Method Bb, Angle (Nicked)

[4] Type 1

[5] Type A

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