

Santoprene™ 121-87

Thermoplastic Vulcanizate

Product Description	Key Features
A hard, black, UV resistant 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 completely recyclable.	<ul style="list-style-type: none"> Recommended for applications requiring excellent flex fatigue resistance. Excellent ozone resistance. Designed for improved UV resistance. EU and China RoHS compliant.

General

Availability ¹	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific 	<ul style="list-style-type: none"> Europe Latin America 	<ul style="list-style-type: none"> North America South America
Applications	<ul style="list-style-type: none"> Automotive - Interior Mat 	<ul style="list-style-type: none"> Automotive - Seals and Gaskets 	<ul style="list-style-type: none"> Automotive - Weather Seals
Uses	<ul style="list-style-type: none"> Automotive Applications 	<ul style="list-style-type: none"> Automotive Exterior Trim 	<ul style="list-style-type: none"> Automotive Interior Trim
Agency Ratings	<ul style="list-style-type: none"> EU Annex XVII of Regulation (EC) No 1907/2006 		
RoHS Compliance	<ul style="list-style-type: none"> RoHS Compliant 		
Automotive Specifications	<ul style="list-style-type: none"> CHRYSLER MS-AR100 EGV FORD WSS-M2D382-B1 	<ul style="list-style-type: none"> GM GMP.E/P.037 GM GMW15812, Type 8 	
Color	<ul style="list-style-type: none"> Black 		
Form(s)	<ul style="list-style-type: none"> Pellets 		
Processing Method	<ul style="list-style-type: none"> Blow Molding Coextrusion Extrusion Extrusion Blow Molding 	<ul style="list-style-type: none"> Injection Blow Molding Injection Molding Multi Injection Molding Profile Extrusion 	<ul style="list-style-type: none"> Sheet Extrusion Thermoforming Vacuum Forming
Revision Date	<ul style="list-style-type: none"> 11/16/2011 		

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Specific Gravity	0.970	0.970	ASTM D792
Density	0.970 g/cm ³	0.970 g/cm ³	ISO 1183

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C), 0.0787 in (2.00 mm)	93	93	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	986 psi	6.80 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	986 psi	6.80 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	2200 psi	15.2 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	2200 psi	15.2 MPa	ISO 37

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

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Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Elongation at Break - Across Flow (73°F (23°C))	570 %	570 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	570 %	570 %	ISO 37
Tear Strength - Across Flow (73°F (23°C), Die C)	286 lbf/in	50.0 kN/m	ASTM D624
Tear Strength - Across Flow 73°F (23°C), Method Bb, Angle (Nicked)	290 lbf/in	50 kN/m	ISO 34-1
Compression Set 73°F (23°C), 22.0 hr, Type 1	28 %	28 %	ASTM D395B
257°F (125°C), 70.0 hr, Type 1	65 %	65 %	
Compression Set 73°F (23°C), 22.0 hr, Type A	28 %	28 %	ISO 815
257°F (125°C), 70.0 hr, Type A	65 %	65 %	
Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
Brittleness Temperature	-72 °F	-58 °C	ASTM D746
Brittleness Temperature	-72 °F	-58 °C	ISO 812
Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Dielectric Strength 73°F (23°C), 0.0800 in (2.03 mm)	670 V/mil	26 kV/mm	ASTM D149
Dielectric Constant 73°F (23°C), 0.0780 in (1.98 mm)	2.70	2.70	ASTM D150
Dielectric Constant 73°F (23°C), 0.0780 in (1.98 mm)	2.70	2.70	IEC 60250
Injection	Typical Value (English)	Typical 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	360 °F	182 °C	
Middle Temperature	370 °F	188 °C	
Front Temperature	380 °F	193 °C	
Nozzle Temperature	390 to 455 °F	199 to 235 °C	
Processing (Melt) Temp	400 to 450 °F	204 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/in ²	41 to 69 MPa	
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	

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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	Typical Value (English)	Typical Value (SI)
Drying Temperature	180 °F	82.2 °C
Drying Time	3.0 hr	3.0 hr
Melt Temperature	400 °F	204 °C
Die Temperature	410 °F	210 °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.

Aging	Typical Value (English)	Typical Value (SI)	Test Based On
Change in Tensile Strength in Air 275°F (135°C), 1008 hr	-3.0 %	-3.0 %	ASTM D573
Change in Tensile Strength in Air 275°F (135°C), 1008 hr	-3.0 %	-3.0 %	ISO 188
Change in Ultimate Elongation in Air 275°F (135°C), 1008 hr	-14 %	-14 %	ASTM D573
Change in Tensile Strain at Break in Air 275°F (135°C), 1008 hr	-14 %	-14 %	ISO 188
Change in Durometer Hardness in Air Shore A, 275°F (135°C), 1008 hr	1.0	1.0	ASTM D573
Change in Shore Hardness in Air Shore A, 275°F (135°C), 1008 hr	1.0	1.0	ISO 188
Continuous Upper Temperature Resistance	275 °F	135 °C	SAE J2236

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.

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. For more information, please consult our Material Safety Data Sheet, Injection Molding Guide and Extrusion Guide.

Notes

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.

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