

Santoprene(TM) Rubber 101-55

Advanced Elastomer Systems - Thermoplastic Elastomer

General Information

Product Description

A soft, 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. Santoprene rubber is a shear-dependent material that can be processed on conventional thermoplastics equipment for injection molding or extrusion. It is polyolefin based and completely recyclable.

General

Material Status	● Commercial: Active
Availability	<ul style="list-style-type: none"> ● Africa ● Asia ● Australia ● Europe ● Latin America ● Middle East ● North America ● Pacific Rim ● South America
Test Standards Available	<ul style="list-style-type: none"> ● ASTM ● ISO
Features	<ul style="list-style-type: none"> ● Chemical Resistance, Good ● Compression Set, Low ● Creep Resistance, Good ● Dimensional Stability, Good ● Fatigue Resistant ● Ozone Resistant ● Recyclable Material
Uses	<ul style="list-style-type: none"> ● Appliance Components ● Automotive Applications ● Diaphragms ● Gaskets ● General Purpose ● Industrial Applications ● Seals ● Tubing
Agency Ratings	● UL 94
Automotive Specifications	<ul style="list-style-type: none"> ● DAIMLERCHRYSLER MSAR 20 Type A ● DELPHI SD-2-346 Sec. 4.1 ● FORD WSD-M2D378-A1 ● GM GMP.E/P.001 ● VALEO VMS-7055
Color	● Black
Forms	● Pellets
Processing Method	<ul style="list-style-type: none"> ● Coextrusion ● Extrusion ● Extrusion, Profile ● Extrusion, Sheet ● Injection Molding ● Injection Molding, Multi

Properties ¹

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (A Scale, 0.120 in)	55		ASTM D2240
Physical	Nominal Value	Unit	Test Method
Density -Specific Gravity	0.97	sp gr 23/23°C	ASTM D792
Elastomers	Nominal Value	Unit	Test Method
Tensile Set	6	%	ASTM D412
Tensile Stress @ 100%	Across Flow: 300	psi	ASTM D412
Tensile Str @ Break Elast (73 °F)	Across Flow: 750	psi	ASTM D412
Elongation @ Break Elast	Across Flow: 390.0	%	ASTM D412
Tear Strength			ASTM D624
(73 °F)	Across Flow: 110	lbf/in	
(212 °F)	Across Flow: 40	lbf/in	
Compression Set			ASTM D395
(73 °F, 168 hr)	20	%	
(212 °F, 168 hr)	27	%	
Thermal	Nominal Value	Unit	Test Method
Max. Continuous Use Tmp	275	°F	ASTM D794
Brittle Temperature	-76	°F	ASTM D746
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength (0.125 in)	500	V/mil	ASTM D149

Dielectric Constant	2.30	ASTM D150
Flammability	Nominal Value Unit	Test Method
Flame Rating - UL	HB	UL 94
Aging	Nominal Value Unit	Test Method
Change in Tensile Strength in Air (302 °F, 168 hr)	-3 %	ASTM D573
Change in Ultimate Elongation in Air (302 °F, 168 hr)	0 %	ASTM D573

Key Features

- Dielectric constant 2.3, dielectric strength at 3.17 mm (125 mil), 19.6 kV/mm (500 V/mil). - UL Yellow Card listed, UL 94 HB flame rating. - Continuous temperature rating 1000 hrs. @ 135°C (275°F). - Excellent flex fatigue resistance. - Excellent ozone resistance.

Processing Statement

Desiccant drying for 3 hours at 82°C (180°F) is recommended. Santoprene rubber has a wide temperature processing window from 177 to 232°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.

Revision Date

07/30/2003

Processing Information

Injection	Nominal Value Unit
Drying Temperature	180 °F
Drying Time	3 hr
Suggested Max Moisture	0.080 %
Suggested Max Regrind	20 %
Rear Temperature	350 °F
Middle Temperature	360 °F
Front Temperature	360 °F
Nozzle Temperature	370 to 430 °F
Processing (Melt) Temp	380 to 450 °F
Mold Temperature	50 to 125 °F
Injection Rate	Fast
Back Pressure	50 to 100 psi
Screw Speed	100 to 200 rpm
Clamp Tonnage	3 to 5 tons/in ²
Cushion	0.125 to 0.250 in
Screw L/D Ratio	16.0:1.0 to 20.0:1.0
Screw Compression Ratio	2.0:1.0 to 2.5:1.0
Vent Depth	0.001 in

Injection Notes

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

Extrusion

Extrusion	Nominal Value Unit
Drying Temperature	180 °F
Drying Time	3 hr
Melt Temperature	385 °F
Die Temperature	390 °F
Back Pressure	725 to 2900 psi

Extrusion Notes

Santoprene rubber 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.

For additional technical, sales and order assistance:

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