All values included in this document are for reference purposes only and should not be construed as material specifications.

Tuesday, February 14, 2006

Santoprene™ TPV 201-80

Advanced Elastomer Systems - *Thermoplastic Elastomer*

General Information

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 • Asia • Australia • Europe • Latin America • Middle East • North America • Pacific Rim • South America
Test Standards Available	• ASTM • ISO
Features	• Chemical Resistance, Good • Colorability, Good • Dimensional Stability, Good • Fatigue Resistant • Ozone Resistant • Recyclable Material • Tear Strength, Good
Uses	• Appliance Components • Automotive Applications • Automotive Under the Hood • Blow Molding Applications • General Purpose • Industrial Applications
Agency Ratings	• UL 94
Color	• Natural Color
Forms	• Pellets
Processing Method	• Blow Molding • Coextrusion • Extrusion • Extrusion Blow Molding • Extrusion, Profile • Extrusion, Sheet • Injection Molding • Injection Molding, Multi • Thermoforming

Properties [1]

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (A Scale, 0.120 in)	80		ASTM D2240
Physical	**Nominal Value**	**Unit**	**Test Method**
Density -Specific Gravity	0.96	sp gr 23/23°C	ASTM D792
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Set	20	%	ASTM D412
Tensile Stress @ 100%	Across Flow: 680	psi	ASTM D412
Tensile Str @ Break Elast (73 °F)	Across Flow: 1610	psi	ASTM D412
Elongation @ Break Elast	Across Flow: 540.0	%	ASTM D412
Tear Strength (73 °F, Die C)	Across Flow: 200	lbf/in	ASTM D624
Compression Set [2]			ASTM D395
(73 °F, 168 hr)	29	%	
(212 °F, 168 hr)	44	%	
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)	-5	%	ASTM D573
Change in Ultimate Elongation in Air (302 °F, 168 hr)	-12	%	ASTM D573
Change in Durometer Hardness in Air (302 °F, 168 hr)	5		ASTM D573
Change in Tensile Strength (257 °F, 70 hr, in IRM 903 Oil)	-25	%	ASTM D471
Change in Ultimate Elongation (257 °F, 70 hr, in IRM 903 Oil)	-43	%	ASTM D471
Change in Volume (257 °F, 70 hr, in IRM 903 Oil)	64	%	ASTM D471

Key Features

- Dielectric constant (ASTM D 150 / ISO 51, Type C) 2.3, dielectric strength (ASTM D 149) 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 (SAE J2236 - Continuous Upper Temperature Resistance [CUTR]): 1008 hrs. @ 135°C (275°F). - Excellent flex fatigue resistance. - Excellent ozone resistance.

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, Extrusion Guide and Blow Molding Guide.

Revision Date

01/23/2006

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 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	370	°F
Nozzle Temperature	380 to 450	°F
Processing (Melt) Temp	390 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/in²
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 TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

Extrusion	Nominal Value	Unit
Drying Temperature	180	°F
Drying Time	3	hr
Melt Temperature	395	°F
Die Temperature	400	°F
Back Pressure	725 to 2900	psi

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] Type 1, Method B

For additional technical, sales and order assistance:

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