Santoprene™ TPV 101-73

Advanced Elastomer Systems - Thermoplastic Elastomer

Wednesday, January 10, 2007

All values included in this document are for reference purposes only and should not be construed as material specifications. The test methods on this Product Data Sheet indicate the internationally recognized standards upon which the manufacturer's work instructions are based.

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. 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	
Uses	• Appliance Components • Automotive Applications • Blow Molding Applications • Diaphrams • Gaskets	• General Purpose • Industrial Applications • Seals • Tubing
Agency Ratings	• EU 2003/11/EC • RoHS Compliant • UL JMLU2	• UL QMFZ2 • UL QMFZ8
Automotive Specifications	• DAIMLERCHRYSLER MSAR 20 Type C Color: Black • DELPHI 7845158 Color: Black • DELPHI 8502 Color: Black • DELPHI DX300100 Color: Black	• FORD WSD-M2D380-A1 Color: Black • GM GMP.E/P.003 Color: Black • TRW TMS-P-10,408 Color: Black • VALEO VMS-8587 Color: Black
Color	• Black	
Forms	• Pellets	
Processing Method	• Blow Molding • Coextrusion • Extrusion • Extrusion, Profile • Extrusion, Sheet	• Injection Molding • Injection Molding, Multi • Thermoforming • Vacuum Forming

Properties [1]

Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore A, 2.00 mm)	78		ISO 868

Physical	Nominal Value	Unit	Test Method
Density	0.97	sp gr 23/23°C	ISO 1183

Elastomers	Nominal Value	Unit	Test Method
Tensile Stress at 100% (23 °C)	Across Flow: 3.6	MPa	ISO 37
Tensile Stress at Break (23 °C)	Across Flow: 8.8	MPa	ISO 37
Tensile Strain at Break (23 °C)	Across Flow: 490.0	%	ISO 37
Tear Strength (23 °C) [2]	Across Flow: 27	kN/m	ISO 34-1
Compression Set [3]			ISO 815
(70 °C, 22.0 hr)	28	%	
(125 °C, 70.0 hr)	37	%	

Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-60	°C	ISO 812

Aging	Nominal Value	Unit	Test Method
Change in Tensile Strain at Break in Air (150 °C, 168 hr)	-3	%	ISO 188
Change in Shore Hardness in Air (150 °C, 168 hr)	7		ISO 188

Key Features

- UL listed: file #JMLU2.MH17699, Gaskets and Seals - Component; file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component - Continuous temperature rating (SAE J2236 - Continuous Upper Temperature Resistance [CUTR]): 1008 hrs. @ 135°C (275°F). - Recommended for applications requiring excellent flex fatigue resistance. - Excellent ozone resistance. - Compliant to EU Directive 2003/11/EC regarding marketing and use of certain dangerous substances and preparations, specifically pentabromodiphenyl ether or octabromodiphenyl ether. - EU Directive 2002/95/EC (RoHS) compliant.

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

03/23/2006

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	82	°C
Drying Time	3	hr
Suggested Max Moisture	0.080	%
Suggested Max Regrind	20	%
Rear Temperature	177	°C
Middle Temperature	182	°C
Front Temperature	188	°C
Nozzle Temperature	193 to 227	°C
Processing (Melt) Temp	199 to 232	°C
Mold Temperature	10 to 52	°C
Injection Rate	Fast	
Back Pressure	0.3 to 0.7	MPa
Screw Speed	100 to 200	rpm
Clamp Tonnage	41 to 69	MPa
Cushion	3.1750 to 6.3500	mm
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	0.0254	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	Unit
Drying Temperature	82	°C
Drying Time	3	hr
Melt Temperature	202	°C
Die Temperature	204	°C
Back Pressure	5.0 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] Method B, Angle (Nicked)

[3] Type A

For additional technical, sales and order assistance:

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