

SANTOPRENE™ 271-73 - TPV

Product Description

A soft, colorable, specialty thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. It is designed for use in non fatty food contact 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 recyclable within the manufacturing stream.

Characteristics

Applications	Consumer - FDA Seals and Closures, Consumer - Packaging, Consumer - Small Appliance, Consumer - Soft Touch Grips, Seals and Gaskets
Uses	Filters, Flexible grips, Food containers, Gaskets, Kitchenware, Living hinges, Non-specific food applications, Seals, Tubing, White goods & small appliances
Agency Ratings	NSF 51, UL QMFZ2, UL QMFZ8
UL File Number	E80017
Color	Natural color
Delivery Form	Pellets
Processing	Blow molding, Coextrusion, Extrusion, Extrusion blow molding, Injection blow molding, Injection molding, Multi injection molding, Profile extrusion, Sheet extrusion, Thermoforming, Vacuum forming

Physical properties	Value	Unit	Test Standard
Density	0.96	g/cm ³	ASTM D792
Density	960	kg/m ³	ISO 1183

Hardness	Value	Unit	Test Standard
Shore A hardness-TPE, 15s	78		ISO 868

Mechanical properties	Value	Unit	Test Standard
Tensile stress at 100%, perpendicular	3.6	MPa	ASTM D412
Tensile stress at 100%, perpendicular	3.6	MPa	ISO 37
Tensile strength at break elast, perpendicular	8.8	MPa	ASTM D412
Tensile stress at break, perpendicular	8.8	MPa	ISO 37
Elongation at break elast, perpendicular	490	%	ASTM D412
Tensile strain at break, perpendicular	490	%	ISO 37
Compression set, 70 °C, 22h, Type 1, Method B	28	%	ASTM D395
Compression set, 70 °C, 22h, Type A	28	%	ISO 815
Compression set, 125 °C, 70h, Type 1, Method B	37	%	ASTM D395
Compression set, 125 °C, 70h, Type A	37	%	ISO 815

Thermal properties	Value	Unit	Test Standard
Brittleness temperature	-60	°C	ASTM D746

Injection	Value	Unit	Test Standard
Drying temperature	82	°C	
Drying time	3	h	
Necessary low maximum residual moisture content	0.08	%	
Suggested maximum regrind	20	%	
Rear temperature	177	°C	
Middle temperature	182	°C	
Front temperature	188	°C	

SANTOPRENE™ 271-73 - TPV

Nozzle temperature	193 - 227	°C
Melt temperature	199 - 232	°C
Mold temperature	10 - 52	°C
Injection speed	fast	-
Back pressure	0.345 - 0.689	MPa
Screw Speed	100 - 200	RPM
Clamp tonnage	41 - 69	MPa
Cushion	3.18 - 6.35	mm
Screw L/D	20:1/*	-
Screw compression ratio	2.5:1/*	-
Vent depth	0.025	mm

Extrusion	Value	Unit
Drying temperature	82	°C
Drying time	3	h
Melt temperature	202	°C
Die head temperature	204	°C
Back pressure	5 - 20	MPa

Aging	Value	Unit	Test Standard
Change in Tensile Strength in Air @ 150 C, 168 h	-1	%	ASTM D573
Change in Tensile Strength in Air @ 150 C, 168 h	-1	%	ISO 188
Change in Ultimate Elongation in Air @ 150 C, 168 h	-3	%	ASTM D573
Change in Tensile Strain at Break in Air @ 150 C, 168 h	-3	%	ISO 188
Change in Durometer Hardness in Air @ 150 C, 168 h, Shore A	7	-	ASTM D573
Change in Shore Hardness in Air @ 150 C, 168 h, Shore A	7	-	ISO 188

Other text information

Processing Notes

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.

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SANTOPRENE™ 271-73 - TPV

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