

Santoprene™ 8221-60

Thermoplastic Vulcanizate

Product Description

A soft, colorable, 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 or blow molding. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- Neutral, easy coloring formulation.
- Used in sealing applications.

General

Applications	Industrial - Architectural and Construction		
Uses	- Construction Applications - Expansion Joint	- Glazing - Outdoor Applications	
Agency Ratings	UL QMFZ2	UL QMFZ8	
RoHS Compliance	RoHS Compliant		
UL File Number	E80017		
Color	Natural Color		
Form(s)	Pellets		
Processing Method	- Blow Molding - Extrusion Blow Molding	- Injection Blow Molding - Injection Molding	Multi Injection Molding

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.950	0.950	ASTM D792
Density	0.950 g/cm ³	0.950 g/cm ³	ISO 1183
Outdoor Suitability	f1	f1	UL 746C

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C)	64	64	
Shore Hardness ²			ISO 7619-1
Shore A, 15 sec, 73°F (23°C)	58	58	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	319 psi	2.20 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	319 psi	2.20 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	827 psi	5.70 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	827 psi	5.70 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	470 %	470 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	470 %	470 %	ISO 37
Compression Set			ASTM D395B
158°F (70°C), 22 hr, Type 1	32 %	32 %	
257°F (125°C), 70 hr, Type 1	60 %	60 %	
Compression Set			ISO 815
158°F (70°C), 22 hr, Type A	32 %	32 %	
257°F (125°C), 70 hr, Type A	60 %	60 %	
Compression Set ³			3rd Party Test Method
158°F (70°C), 22 hr, Type A	41 %	41 %	



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Thermal	Typical Value (English)	Typical Value (SI)	Test Based On
Brittleness Temperature	-81 °F	-63 °C	ASTM D746
Brittleness Temperature	-81 °F	-63 °C	ISO 812
RTI Elec	212 °F	100 °C	UL 746
RTI Str	185 °F	85.0 °C	UL 746

Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Dielectric Strength 73°F (23°C), 0.0787 in (2.00 mm)	790 V/mil	31 kV/mm	ASTM D149
Dielectric Constant 73°F (23°C), 0.0791 in (2.01 mm)	2.30	2.30	ASTM D150
Dielectric Constant 73°F (23°C), 0.0791 in (2.01 mm)	2.30	2.30	IEC 60250

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	180 °F	82 °C
Drying Time	3.0 hr	3.0 hr
Suggested Max Moisture	0.080 %	0.080 %
Suggested Max Regrind	20 %	20 %
Rear Temperature	350 to 375 °F	177 to 191 °C
Middle Temperature	355 to 380 °F	179 to 193 °C
Front Temperature	365 to 390 °F	185 to 199 °C
Nozzle Temperature	365 to 410 °F	185 to 210 °C
Processing (Melt) Temp	290 to 420 °F	143 to 216 °C
Mold Temperature	75 to 125 °F	24 to 52 °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	1.0E-3 in	0.025 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	Typical Value (English)	Typical Value (SI)
Melt Temperature	355 to 420 °F	179 to 216 °C
Die Temperature	350 to 420 °F	177 to 216 °C

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating			UL 94
0.04 in (1.1 mm)	HB	HB	
0.12 in (3.0 mm)	HB	HB	

