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SANTOPRENE® 8221-60

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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.

Product information

Resin Identification	TPV	ISO 1043
Part Marking Code	>TPV<	ISO 11469

Typical mechanical properties

Tensile stress at 100% elongation, perpendicular	2.2	MPa	ISO 37
Tensile stress at break, perpendicular	5.7	MPa	ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	470	%	ISO 527-1/-2 or ISO 37
Brittleness Temperature	-63	°C	ASTM D 746
Low temperature brittleness	-63	°C	ISO 812
Shore A hardness, 15s	64		ISO 48-4 / ISO 868
Compression set, 70°C, 24h	32	%	ISO 815
Compression set, 125°C, 70h	60	%	ISO 815

Thermal properties

RTI, electrical, 1.5mm	100	°C	UL 746B
RTI, electrical, 3.0mm	100	°C	UL 746B
RTI, strength, 1.5mm	85	°C	UL 746B
RTI, strength, 3.0mm	85	°C	UL 746B

Specific Application Suitability

Outdoor suitability	f1	UL 746C

Flammability

Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	1.1	mm	IEC 60695-11-10
UL recognition	yes		UL 94

Electrical properties

Relative permittivity, 60Hz	2.3	IEC 62631-2-1

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Physical/Other properties

Density	950	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	≥3	h
Processing Moisture Content	≤0.08	%
Max. regrind level	20	%
Melt Temperature Optimum	200	°C
Min. melt temperature	185	°C
Max. melt temperature	215	°C
Mold Temperature Optimum	35	°C
Min. mould temperature	20	°C
Max. mould temperature	50	°C

Extrusion

Melt Temperature Range	179 - 216	°C

Characteristics

Processing	Injection Moulding, Multi Injection Moulding, Blow Moulding
Delivery form	Pellets
Special characteristics	U.V. stabilised or stable to weather

Additional information

Injection molding

Holding pressure should be about 50 to 75% of the actual injection pressure.
A high screw RPM (100 to 200) is recommended.
Back pressure is not always needed, however, a back pressure of 0.3 to 0.7 MPa may be used to ensure a homogeneous melt and maintain a consistent shot size.
A higher back pressure is normally employed when using masterbatches.

Processing Notes

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.

Santoprene® TPV has a relatively high melt viscosity at low shear rates. Viscosity decreases as the shear rate increases.
Increasing temperature has little effect on TPV melt viscosity. Smaller gates and higher shear rates keep melt viscosity low and improve melt flow. Please also refer to the injection molding guide.

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