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SANTOPRENE® 251-80W232-LD

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A soft, colorable, low density flame retardant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material has good fluid resistance and contains non-ether brominated flame retardants. It does not contain metal deactivators. 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.

Key Features

- Recommended for applications requiring a flame retardant material
- Recommended for applications requiring excellent flex fatigue resistance.
- Recommended for applications requiring excellent ozone resistance.

Product information

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

Typical mechanical properties

Tensile stress at 100% elongation, perpendicular	3.9	MPa	ISO 37
Tensile stress at break, perpendicular	9	MPa	ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	550	%	ISO 527-1/-2 or ISO 37
Shore A hardness, 15s	86		ISO 48-4 / ISO 868
Compression set, 23 °C	31	%	ISO 815
Time	168	h	
Compression set, 70 °C, 24h	40	%	ISO 815

Thermal properties

RTI, electrical, 1.5mm	90	°C	UL 746B
RTI, electrical, 3.0mm	90	°C	UL 746B
RTI, strength, 1.5mm	85	°C	UL 746B
RTI, strength, 3.0mm	90	°C	UL 746B

Flammability

Oxygen index	27	%	ISO 4589-1/-2

Electrical properties

Comparative tracking index, 23 °C	0	PLC	UL 746A

Physical/Other properties

Density	1280	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

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Min. melt temperature	190	°C
Max. melt temperature	210	°C
Mold Temperature Optimum	30	°C
Min. mould temperature	10	°C
Max. mould temperature	50	°C

Extrusion

Drying Temperature	82	°C
Drying Time, Dehumidified Dryer	3	h

Characteristics

Processing	Injection Moulding, Multi Injection Moulding, Extrusion, Sheet Extrusion, Coextrusion, Blow Moulding, Thermoforming
Delivery form	Pellets

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.

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
VW Group	VW 50123	LF3001 Nat, VW EA211_Flame Retar_SOP 04/23

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