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SANTOPRENE® 123-40

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A hard, black, 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, extrusion, blow molding, thermoforming or vacuum forming. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- Recommended for applications requiring excellent flex fatigue resistance
- Excellent ozone resistance
- Designed for improved UV resistance

Product information

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

Typical mechanical properties

Tensile stress at 100% elongation, perpendicular	9.1	MPa	ISO 37
Tensile stress at break, perpendicular	19.1	MPa	ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	620	%	ISO 527-1/-2 or ISO 37
Brittleness Temperature	-58	°C	ASTM D 746
Low temperature brittleness	-58	°C	ISO 812
Shore D hardness, 15s	41		ISO 48-4 / ISO 868

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 2 mm	24.7	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 60Hz	2.6		IEC 62631-2-1

Physical/Other properties

Density	960	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	220	°C
Min. melt temperature	205	°C
Max. melt temperature	230	°C
Mold Temperature Optimum	30	°C
Min. mould temperature	10	°C
Max. mould temperature	50	°C

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Extrusion

Drying Temperature	82 °C
Drying Time, Dehumidified Dryer	3 h
Melt Temperature Range	210 °C

Characteristics

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

Additional information

Non Standard Data

Property Name	Condition	Value	Unit	Standard
Change in Tensile Strength	150°C, 168h	-17	%	ISO 188
Change in Tensile Strain at Break	150°C, 168h	-22	%	ISO 188
Change in Shore D Hardness	150°C, 168h	2	-	ISO 188

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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Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	GMW15812P-TPV(EPDM+PP)-Type 9	N/A
Li Auto	Q/LiA5310057	2021 (V2)
Mercedes-Benz	DBL5562	
Stellantis	55248_02 EMP140	MS-AR-100 GGV
VW Group	VW 50123	

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