Celanese
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SANTOPRENE® 281-64MED

SANTOPRENE®

A soft, colorable, specialty thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. It is designed for use in medical and healthcare applications. This grade of Santoprene® TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding or extrusion. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- Biocompatibility in tests corresponding to USP Class VI/ISO 10993
- A representative grade undergoes annual testing for cytotoxicity and heavy metals
- Drug master file maintained with the FDA
- Recommended for applications requiring excellent flex fatigue resistance

Product information

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

Typical mechanical properties

Tensile stress at 100% elongation, perpendicular	2.7	MPa	ISO 37
Tensile stress at break, perpendicular	6.1	MPa	ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	432	%	ISO 527-1/-2 or ISO 37
Shore A hardness, 15s	71		ISO 48-4 / ISO 868
Compression set, 23 °C	23.7	%	ISO 815
Time	168	h	
Compression set, 70 °C, 24h	27	%	ISO 815
Compression set, 125 °C, 24h	34	%	ISO 815
Compression set, 125 °C, 70h	44	%	ISO 815

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	%
Melt Temperature Optimum	210	°C
Min. melt temperature	190	°C
Max. melt temperature	230	°C
Mold Temperature Optimum	30	°C
Min. mould temperature	10	°C
Max. mould temperature	50	°C

Characteristics

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

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Additional information

Non Standard Data

Property Name	Condition	Value	Unit	Standard
Change in Tensile Strength	150 °C, 168h	-12	%	ISO 188
Change in Tensile Strain at Break	150 °C, 168h	6	%	ISO 188
Change in Shore A 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 in the molten state.

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.