

# Santoprene™ 8281-45MED

## Thermoplastic Vulcanizate

### Product Description

A soft, colorable, specialty, non-hygroscopic 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. It is polyolefin based and recyclable within the manufacturing stream.

### Key Features

- Based on a series of biocompatibility tests conducted on representative grades, this grade should meet the USP (U.S. Pharmacopeia) Class VI requirements for plastics.
- Additionally some ISO 10993 tests have been conducted.
- Each medical grade undergoes annual testing for cytotoxicity and heavy metals.
- Drug master file maintained with the FDA.

### General

Applications	▪ Medical - Soft Touch Grips, USP Class VI Seals and Gaskets	
Uses	▪ Medical/Healthcare Applications	
Agency Ratings	▪ USP Class VI	
RoHS Compliance	▪ RoHS Compliant	
Color	▪ Natural Color	
Form(s)	▪ Pellets	
Processing Method	▪ Injection Molding	▪ Multi Injection Molding

Physical	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.910	0.910	ASTM D792
Density	0.910 g/cm <sup>3</sup>	0.910 g/cm <sup>3</sup>	ISO 1183

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C)	49	49	

Elastomers	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	189 psi	1.30 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	189 psi	1.30 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	522 psi	3.60 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	522 psi	3.60 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	440 %	440 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	440 %	440 %	ISO 37
Compression Set			ASTM D395B
73°F (23°C), 168 hr, Type 1	12 %	12 %	
Compression Set			ISO 815
73°F (23°C), 168 hr, Type A	12 %	12 %	



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Injection	Typical Value (English)	Typical Value (SI)
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 <sup>2</sup>	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

