

SANTOPRENE® 121-80

SANTOPRENE®

A soft, 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

- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component
- 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 | 4.6 MPa | ISO 527-1/-2 or ISO 37 |
| Stress at break, perpendicular | 11 MPa | ISO 527-1/-2 or ISO 37 |
| Elongation at break, perpendicular | 560 % | ISO 527-1/-2 or ISO 37 |
| Brittleness Temperature | -59 °C | ASTM D 746 |
| Shore A hardness, 15s | 85 | ISO 48-4 / ISO 868 |
| Compression set, 23 °C, 24h | 25 % | ISO 815 |
| Compression set, 125 °C, 70h | 52 % | ISO 815 |

Thermal properties

| | | |
|------------------------|-------|---------|
| RTI, electrical, 1.5mm | 90 °C | UL 746B |
| RTI, electrical, 3.0mm | 90 °C | UL 746B |
| RTI, strength, 1.5mm | 90 °C | UL 746B |
| RTI, strength, 3.0mm | 95 °C | UL 746B |

Specific Application Suitability

| | | |
|------------------------------------------------|--------|-----------|
| Continuous Upper Temperature Resistance, 1000h | 135 °C | SAE J2236 |
| Detergent resistance | f3 | UL 749 |
| Detergent resistance | f4 | UL 2157 |
| Outdoor suitability | f1 | UL 746C |

Flammability

| | | |
|--------------------------------------|----------|-----------------|
| Burning Behav. at 1.5mm nom. thickn. | HB class | IEC 60695-11-10 |
| Thickness tested | 1.5 mm | IEC 60695-11-10 |
| UL recognition | yes | UL 94 |
| Burning Behav. at thickness h | HB class | IEC 60695-11-10 |
| Thickness tested | 1 mm | IEC 60695-11-10 |
| UL recognition | yes | UL 94 |
| Hot Wire Ignition, 1.5mm | PLC 3 s | UL 746A |

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Hot Wire Ignition, 3mm

PLC 2 s

UL 746A

Electrical properties

Relative permittivity, 60Hz

2.6

IEC 62631-2-1

Arc Resistance Performance Level Category

PLC 6 class

UL 746B

Electric Strength, Short Time, 2mm

28 kV/mm

ASTM D 149

High Amperage Arc Ignition Category, 1.5 mm

PLC 0 class

UL 746A

Physical/Other properties

Density

970 kg/m³

ISO 1183

Injection

Drying Temperature

82 °C

Drying Time, Dehumidified Dryer

3 h

Processing Moisture Content

≤0.08 %

Max. regrind level

20 %

Min. mould temperature

10 °C

Max. mould temperature

52 °C

Back pressure

0.517 MPa

Extrusion

Drying Temperature

82 °C

Drying Time, Dehumidified Dryer

3 h

Melt Temperature Range

202 °C

Additional information

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.