

Santoprene™ 8221-60

Thermoplastic Vulcanizate

Product Description

A soft, colorable, 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 or blow molding. 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.
- Neutral, easy coloring formulation.
- Used in sealing applications.

General

| | | | |
|---------------------------|--|---|---|
| Availability ¹ | <ul style="list-style-type: none"> Africa & Middle East Asia Pacific | <ul style="list-style-type: none"> Europe Latin America | <ul style="list-style-type: none"> North America |
| Applications | <ul style="list-style-type: none"> Industrial - Architectural and Construction | | |
| Uses | <ul style="list-style-type: none"> Construction Applications Expansion Joint | <ul style="list-style-type: none"> Glazing Outdoor Applications | |
| Agency Ratings | <ul style="list-style-type: none"> UL QMFZ2 | <ul style="list-style-type: none"> UL QMFZ8 | |
| RoHS Compliance | <ul style="list-style-type: none"> RoHS Compliant | | |
| UL File Number | <ul style="list-style-type: none"> E80017 | | |
| Color | <ul style="list-style-type: none"> Natural Color | | |
| Form(s) | <ul style="list-style-type: none"> Pellets | | |
| Processing Method | <ul style="list-style-type: none"> Blow Molding Extrusion Blow Molding | <ul style="list-style-type: none"> Injection Blow Molding Injection Molding | <ul style="list-style-type: none"> Multi Injection Molding |
| Revision Date | <ul style="list-style-type: none"> 06/20/2014 | | |

| Physical | Typical Value (English) | Typical Value (SI) | Test Based On |
|----------------------------|-------------------------|-------------------------|---------------|
| Density / Specific Gravity | 0.950 | 0.950 | ASTM D792 |
| Density | 0.950 g/cm ³ | 0.950 g/cm ³ | ISO 1183 |
| Outdoor Suitability | f1 | f1 | UL 746C |

| Hardness | Typical Value (English) | Typical Value (SI) | Test Based On |
|------------------------------|-------------------------|--------------------|---------------|
| Shore Hardness | | | ISO 868 |
| Shore A, 15 sec, 73°F (23°C) | 64 | 64 | |

| Elastomers | Typical Value (English) | Typical Value (SI) | Test Based On |
|---|-------------------------|--------------------|---------------|
| Tensile Stress at 100% - Across Flow (73°F (23°C)) | 319 psi | 2.20 MPa | ASTM D412 |
| Tensile Stress at 100% - Across Flow (73°F (23°C)) | 319 psi | 2.20 MPa | ISO 37 |
| Tensile Strength at Break - Across Flow (73°F (23°C)) | 827 psi | 5.70 MPa | ASTM D412 |
| Tensile Stress at Break - Across Flow (73°F (23°C)) | 827 psi | 5.70 MPa | ISO 37 |
| Elongation at Break - Across Flow (73°F (23°C)) | 470 % | 470 % | ASTM D412 |
| Tensile Strain at Break - Across Flow (73°F (23°C)) | 470 % | 470 % | ISO 37 |
| Compression Set | | | ASTM D395B |
| 158°F (70°C), 22 hr, Type 1 | 32 % | 32 % | |
| 257°F (125°C), 70 hr, Type 1 | 60 % | 60 % | |
| Compression Set | | | ISO 815 |
| 158°F (70°C), 22 hr, Type A | 32 % | 32 % | |
| 257°F (125°C), 70 hr, Type A | 60 % | 60 % | |

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| Thermal | Typical Value (English) | Typical Value (SI) | Test Based On |
|-------------------------|-------------------------|--------------------|---------------|
| Brittleness Temperature | -81 °F | -63 °C | ASTM D746 |
| Brittleness Temperature | -81 °F | -63 °C | ISO 812 |
| RTI Elec | 212 °F | 100 °C | UL 746 |
| RTI Str | 185 °F | 85.0 °C | UL 746 |

| Electrical | Typical Value (English) | Typical Value (SI) | Test Based On |
|----------------------------------|-------------------------|--------------------|---------------|
| Dielectric Strength | | | ASTM D149 |
| 73°F (23°C), 0.0787 in (2.00 mm) | 790 V/mil | 31 kV/mm | |
| Dielectric Constant | | | ASTM D150 |
| 73°F (23°C), 0.0791 in (2.01 mm) | 2.30 | 2.30 | |
| Dielectric Constant | | | IEC 60250 |
| 73°F (23°C), 0.0791 in (2.01 mm) | 2.30 | 2.30 | |

| Injection | Typical Value (English) | Typical Value (SI) |
|-------------------------|---------------------------------|-------------------------|
| Drying Temperature | 180 °F | 82 °C |
| Drying Time | 3.0 hr | 3.0 hr |
| 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 ² | 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 |

Injection Notes

Santoprene TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

| Extrusion | Typical Value (English) | Typical Value (SI) |
|------------------|-------------------------|--------------------|
| Melt Temperature | 355 to 420 °F | 179 to 216 °C |
| Die Temperature | 350 to 420 °F | 177 to 216 °C |

| Flammability | Typical Value (English) | Typical Value (SI) | Test Based On |
|------------------|-------------------------|--------------------|---------------|
| Flame Rating | | | UL 94 |
| 0.04 in (1.1 mm) | HB | HB | |
| 0.12 in (3.0 mm) | HB | HB | |

| Additional Information | Typical Value (English) | Typical Value (SI) |
|------------------------|-------------------------|--------------------|
|------------------------|-------------------------|--------------------|

Where applicable, test results based on fan gated, injection molded plaques.

Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C.

Compression set at 25% deflection.

All products purchased directly from an ExxonMobil affiliate in Europe are REACH compliant. For products not imported into Europe by ExxonMobil, customers should assess their legal responsibilities under REACH.

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Legal Statement

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Processing Statement

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. For more information, please consult our Safety Data Sheet, Injection Molding Guide and Extrusion Guide.

Notes

Typical properties: these are not to be construed as specifications.

¹ Product may not be available in one or more countries in the identified Availability regions. Please contact your Sales Representative for complete Country Availability.

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