

Santoprene™ 121-73W175

Thermoplastic Vulcanizate

Product Description

A soft, black, UV resistant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material combines good physical properties and chemical resistance, and is designed for thin wall or complex profile extrusion applications. This grade of Santoprene™ TPV is shear-dependent and can be processed on conventional thermoplastics equipment for extrusion, 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.
- Designed for extruding thin wall sections with excellent definition (down to 0.33 mm [0.013"] radius) and to maximize run length with minimal build-up of material on screen packs or narrow sections of dies

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"> • Automotive - Seals and Gaskets • Automotive - Weather Seals • Industrial - Expansion Joints • Industrial - Rail Pads and Rail Boots • Industrial - Residential Window and Door Seals • Industrial - Water Stops for Containment Structures | | |
| Uses | <ul style="list-style-type: none"> • Automotive Applications | <ul style="list-style-type: none"> • Automotive Exterior Trim | <ul style="list-style-type: none"> • Outdoor Applications |
| RoHS Compliance | <ul style="list-style-type: none"> • RoHS Compliant | | |
| Automotive Specifications | <ul style="list-style-type: none"> • CHRYSLER MS-AR-100 CGV | <ul style="list-style-type: none"> • FORD WSS-M2D380-B1 | <ul style="list-style-type: none"> • GM GMW15812, Type 6E |
| UL File Number | <ul style="list-style-type: none"> • E80017 | | |
| Color | <ul style="list-style-type: none"> • Black | | |
| Form(s) | <ul style="list-style-type: none"> • Pellets | | |
| Processing Method | <ul style="list-style-type: none"> • Coextrusion • Extrusion | <ul style="list-style-type: none"> • Profile Extrusion • Sheet Extrusion | <ul style="list-style-type: none"> • Thermoforming • Vacuum Forming |
| Revision Date | <ul style="list-style-type: none"> • 10/01/2017 | | |

| Physical | Typical Value (English) | Typical Value (SI) | Test Based On |
|----------------------------|-------------------------|-------------------------|---------------|
| Density / Specific Gravity | 0.970 | 0.970 | ASTM D792 |
| Density | 0.970 g/cm ³ | 0.970 g/cm ³ | ISO 1183 |

| Hardness | Typical Value (English) | Typical Value (SI) | Test Based On |
|------------------------------|-------------------------|--------------------|---------------|
| Shore Hardness | | | ISO 868 |
| Shore A, 15 sec, 73°F (23°C) | 78 | 78 | |



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| Elastomers | Typical Value (English) | Typical Value (SI) | Test Based On |
|--|-------------------------|--------------------|---------------|
| Tensile Stress at 100% - Across Flow (73°F (23°C)) | 545 psi | 3.76 MPa | ASTM D412 |
| Tensile Stress at 100% - Across Flow (73°F (23°C)) | 545 psi | 3.76 MPa | ISO 37 |
| Tensile Strength at Break - Across Flow (73°F (23°C)) | 1260 psi | 8.69 MPa | ASTM D412 |
| Tensile Stress at Break - Across Flow (73°F (23°C)) | 1260 psi | 8.69 MPa | ISO 37 |
| Elongation at Break - Across Flow (73°F (23°C)) | 460 % | 460 % | ASTM D412 |
| Tensile Strain at Break - Across Flow (73°F (23°C)) | 460 % | 460 % | ISO 37 |
| Tear Strength - Across Flow 73°F (23°C), Method Ba, Angle (Unnicked) | 150 lbf/in | 27 kN/m | ISO 34-1 |
| Compression Set 158°F (70°C), 22 hr, Type 1 257°F (125°C), 70 hr, Type 1 | 34 % 42 % | 34 % 42 % | ASTM D395B |
| Compression Set 158°F (70°C), 22 hr, Type A 257°F (125°C), 70 hr, Type A | 34 % 42 % | 34 % 42 % | ISO 815 |

| Thermal | Typical Value (English) | Typical Value (SI) | Test Based On |
|-------------------------|-------------------------|--------------------|---------------|
| Brittleness Temperature | -76 °F | -60 °C | ASTM D746 |
| Brittleness Temperature | -76 °F | -60 °C | ISO 812 |

| Electrical | Typical Value (English) | Typical Value (SI) | Test Based On |
|---|-------------------------|--------------------|---------------|
| Dielectric Strength 73°F (23°C), 0.0787 in (2.00 mm) | 690 V/mil | 27 kV/mm | ASTM D149 |
| Dielectric Constant 73°F (23°C), 0.0780 in (1.98 mm) | 2.70 | 2.70 | ASTM D150 |
| Dielectric Constant 73°F (23°C), 0.0780 in (1.98 mm) | 2.70 | 2.70 | IEC 60250 |

| Extrusion | Typical Value (English) | Typical Value (SI) |
|--------------------|-------------------------|--------------------|
| Drying Temperature | 180 °F | 82 °C |
| Drying Time | 3.0 hr | 3.0 hr |
| Melt Temperature | 350 to 400 °F | 177 to 204 °C |
| Die Temperature | 400 °F | 204 °C |
| Back Pressure | 725 to 2900 psi | 5.00 to 20.0 MPa |

Extrusion Notes

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



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| Aging | Typical Value (English) | Typical Value (SI) | Test Based On |
|---|-------------------------|--------------------|---------------|
| Change in Tensile Strength in Air 302°F (150°C), 168 hr | -25 % | -25 % | ASTM D573 |
| Change in Tensile Strength in Air 302°F (150°C), 168 hr | -25 % | -25 % | ISO 188 |
| Change in Ultimate Elongation in Air 302°F (150°C), 168 hr | -23 % | -23 % | ASTM D573 |
| Change in Tensile Strain at Break in Air 302°F (150°C), 168 hr | -23 % | -23 % | ISO 188 |
| Change in Durometer Hardness in Air Shore A, 302°F (150°C), 168 hr | 1.0 | 1.0 | ASTM D573 |
| Change in Shore Hardness in Air Shore A, 302°F (150°C), 168 hr | 1.0 | 1.0 | ISO 188 |
| Continuous Upper Temperature Resistance 1008 hr | 275 °F | 135 °C | SAE J2236 |

| Flammability | Typical Value (English) | Typical Value (SI) | Test Based On |
|------------------|-------------------------|--------------------|---------------|
| Flame Rating | | | UL 94 |
| 0.04 in (1.0 mm) | HB | HB | |
| 0.06 in (1.5 mm) | HB | HB | |
| 0.12 in (3.0 mm) | HB | HB | |

Additional Information

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.

Legal Statement

This product, including the product name, shall not be used or tested in any medical application without the prior written acknowledgement of ExxonMobil Chemical as to the intended use. For detailed Product Stewardship information, please contact Customer Service.

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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. Do not exceed 15% drawdown. For more information, please consult our Safety Data Sheet 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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For additional technical, sales and order assistance: www.exxonmobilchemical.com/ContactUs

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