

# Santoprene™ 121-67W175

## 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

- 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

|                           |   |  |                                     |
|---------------------------|---|--|-------------------------------------|
| Applications              | ▪ Automotive - Seals and Gaskets ▪ Automotive - Weather Seals |  |                                     |
| Uses                      | ▪ Automotive Applications                                     | ▪ Automotive Exterior Trim               | ▪ Outdoor Applications              |
| RoHS Compliance           | ▪ RoHS Compliant  |  |                                     |
| Automotive Specifications | ▪ CHRYSLER MS-AR-100 BGV                                      | ▪ FORD WSS-M2D379-B1                     | ▪ GM GMW15812, Type 5E              |
| Color                     | ▪ Black   |  |                                     |
| Form(s)                   | ▪ Pellets   |  |                                     |
| Processing Method         | ▪ Coextrusion<br>▪ Extrusion                                  | ▪ Profile Extrusion<br>▪ Sheet Extrusion | ▪ Thermoforming<br>▪ Vacuum Forming |

| Physical                   | Typical Value (English) | Typical Value (SI)      | Test Based On |
|----------------------------|-------------------------|-------------------------|---------------|
| Density / Specific Gravity | 0.970                   | 0.970                   | ASTM D792     |
| Density                    | 0.970 g/cm <sup>3</sup> | 0.970 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) | 72                      | 72                 |               |

| Elastomers  | Typical Value (English) | Typical Value (SI) | Test Based On |
|---|-------------------------|--------------------|---------------|
| Tensile Stress at 100% - Across Flow (73°F (23°C))                      | 419 psi                 | 2.89 MPa           | ASTM D412     |
| Tensile Stress at 100% - Across Flow (73°F (23°C))                      | 418 psi                 | 2.88 MPa           | ISO 37        |
| Tensile Strength at Break - Across Flow (73°F (23°C))                   | 991 psi                 | 6.83 MPa           | ASTM D412     |
| Tensile Stress at Break - Across Flow (73°F (23°C))                     | 991 psi                 | 6.83 MPa           | ISO 37        |
| Elongation at Break - Across Flow (73°F (23°C))                         | 430 %                   | 430 %              | ASTM D412     |
| Tensile Strain at Break - Across Flow (73°F (23°C))                     | 430 %                   | 430 %              | ISO 37        |
| Tear Strength - Across Flow<br>73°F (23°C), Method Ba, Angle (Unnicked) | 140 lbf/in              | 24 kN/m            | ISO 34-1      |
| Compression Set   |                         |                    | ASTM D395B    |
| 158°F (70°C), 22 hr, Type 1   | 29 %                    | 29 %               |               |
| 257°F (125°C), 70 hr, Type 1  | 43 %                    | 43 %               |               |
| Compression Set   |                         |                    | ISO 815       |
| 158°F (70°C), 22 hr, Type A   | 29 %                    | 29 %               |               |
| 257°F (125°C), 70 hr, Type A  | 43 %                    | 43 %               |               |



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| Thermal                 | Typical Value (English) | Typical Value (SI) | Test Based On |
|-------------------------|-------------------------|--------------------|---------------|
| Brittleness Temperature | -74 °F                  | -59 °C             | ASTM D746     |
| Brittleness Temperature | -74 °F                  | -59 °C             | ISO 812       |

| Electrical  | Typical Value (English) | Typical Value (SI) | Test Based On |
|---|-------------------------|--------------------|---------------|
| Dielectric Strength<br>73°F (23°C), 0.0787 in (2.00 mm) | 670 V/mil               | 26 kV/mm           | ASTM D149     |
| Dielectric Constant<br>73°F (23°C), 0.0760 in (1.93 mm) | 2.60                    | 2.60               | ASTM D150     |
| Dielectric Constant<br>73°F (23°C), 0.0760 in (1.93 mm) | 2.60                    | 2.60               | 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.

| Aging   | Typical Value (English) | Typical Value (SI) | Test Based On |
|---|-------------------------|--------------------|---------------|
| Change in Tensile Strength in Air<br>302°F (150°C), 168 hr            | -12 %                   | -12 %              | ASTM D573     |
| Change in Tensile Strength in Air<br>302°F (150°C), 168 hr            | -12 %                   | -12 %              | ISO 188       |
| Change in Ultimate Elongation in Air<br>302°F (150°C), 168 hr         | -0.50 %                 | -0.50 %            | ASTM D573     |
| Change in Tensile Strain at Break in Air<br>302°F (150°C), 168 hr     | -0.50 %                 | -0.50 %            | ISO 188       |
| Change in Durometer Hardness in Air<br>Shore A, 302°F (150°C), 168 hr | 0.0                     | 0.0                | ASTM D573     |
| Change in Shore Hardness in Air<br>Shore A, 302°F (150°C), 168 hr     | 0.0                     | 0.0                | ISO 188       |
| Continuous Upper Temperature Resistance<br>1008 hr                    | 275 °F                  | 135 °C             | SAE J2236     |

