

# SANTOPRENE® 121-55W241

## 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 difficult injection molding 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

- Used in glass encapsulation applications
- Used in sealing applications
- Recommended for applications requiring superior part surface appearance
- Designed to be injected at lower molding temperatures or at lower injection pressures

### Product information

|                      |       |           |
|----------------------|-------|-----------|
| Resin Identification | TPV   | ISO 1043  |
| Part Marking Code    | >TPV< | ISO 11469 |

### Typical mechanical properties

|  |         |                        |
|--|---------|------------------------|
| Tensile stress at 100% elongation, perpendicular | 2 MPa   | ISO 37                 |
| Tensile stress at break, perpendicular           | 4.8 MPa | ISO 527-1/-2 or ISO 37 |
| Elongation at break, perpendicular               | 480 %   | ISO 527-1/-2 or ISO 37 |
| Brittleness Temperature                          | -63 °C  | ASTM D 746             |
| Low temperature brittleness                      | -63 °C  | ISO 812                |
| Shore A hardness, 15s                            | 59      | ISO 48-4 / ISO 868     |
| Compression set, 23 °C                           | 29 %    | ISO 815                |
| Time   | 70 h    |                        |
| Compression set, 125 °C, 70h                     | 56 %    | ISO 815                |

### Physical/Other properties

|         |                       |          |
|---------|-----------------------|----------|
| Density | 920 kg/m <sup>3</sup> | ISO 1183 |
|---------|-----------------------|----------|

### Injection

|                                 |         |
|---------------------------------|---------|
| Drying Recommended              | yes     |
| Drying Temperature              | 80 °C   |
| Drying Time, Dehumidified Dryer | ≥3 h    |
| Processing Moisture Content     | ≤0.08 % |
| Melt Temperature Optimum        | 200 °C  |
| Min. melt temperature           | 185 °C  |
| Max. melt temperature           | 220 °C  |
| Mold Temperature Optimum        | 30 °C   |
| Min. mould temperature          | 10 °C   |
| Max. mould temperature          | 50 °C   |

### Characteristics

|                         |  |
|-------------------------|--|
| Processing              | Injection Moulding, Multi Injection Moulding |
| Delivery form           | Pellets                                      |
| Special characteristics | U.V. stabilised or stable to weather         |

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### Additional information

#### Injection molding

Holding pressure should be about 50 to 75% of the actual injection pressure.

A high screw RPM (100 to 200) is recommended.

Back pressure is not always needed, however, a back pressure of 0.3 to 0.7 MPa may be used to ensure a homogeneous melt and maintain a consistent shot size.

A higher back pressure is normally employed when using masterbatches.

#### 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.

Santoprene® TPV has a relatively high melt viscosity at low shear rates. Viscosity decreases as the shear rate increases.

Increasing temperature has little effect on TPV melt viscosity. Smaller gates and higher shear rates keep melt viscosity low and improve melt flow. Please also refer to the injection molding guide.

### Automotive

OEM

Hyundai

STANDARD

MS220-05 Type J