Product Information
Automotive and Transportation

**Multiflex® G 55 A 11 B Z1751**
Thermoplastic Elastomer

**FEATURES & BENEFITS**
- UV Stabilized
- Natural in color
- Compatibility: PP

**APPLICATIONS**
- Multiflex® G 55 A 11 B Z1751 is designed for use in injection molding/extrusion

**TYPICAL PROPERTIES**
Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

<table>
<thead>
<tr>
<th>Test*</th>
<th>Property</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 868</td>
<td>Hardness</td>
<td>Sh.A</td>
<td>55</td>
</tr>
<tr>
<td>ISO 1183/A</td>
<td>Density</td>
<td>g/cm³</td>
<td>1.18</td>
</tr>
<tr>
<td>MDA 179</td>
<td>Spiral flow condition A</td>
<td>cm</td>
<td>75</td>
</tr>
<tr>
<td>ISO 37 Type 1</td>
<td>v = 500 mm/min</td>
<td>Tensile strength at 100% elongation cross direction</td>
<td>MPa</td>
</tr>
<tr>
<td>ISO 37 Type 1</td>
<td>v = 500 mm/min</td>
<td>Tensile strength at break cross direction</td>
<td>MPa</td>
</tr>
<tr>
<td>ISO 37 Type 1</td>
<td>v = 500 mm/min</td>
<td>Elongation at break cross direction</td>
<td>%</td>
</tr>
<tr>
<td>ISO 34</td>
<td>Tear strength cross direction</td>
<td>kN/m</td>
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<tr>
<td>MDA 129</td>
<td>Compression set 24h/23°C without annealing</td>
<td>%</td>
<td>12</td>
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<tr>
<td>MDA 129</td>
<td>Compression set 24h/70°C without annealing</td>
<td>%</td>
<td>38</td>
</tr>
<tr>
<td>MDA 129</td>
<td>Compression set 24h/100°C without annealing</td>
<td>%</td>
<td>63</td>
</tr>
</tbody>
</table>

*ISO: International Standardization Organization
MDA (Méthode d’Analyse): Issued from ISO Standards

**GUIDELINES FOR INJECTION MOLDING**

**Drying:** Multiflex® G 55 A 11 B Z1751 is not moisture sensitive, therefore drying is not needed. However, if this material is stored in high humidity conditions, it is recommended to dry for two hours at maximum 80°C.

| Barrel temperature °C | Feed Zone | 150 +/- 10 |
| Transition | 170 +/- 10 |
| Front | 190 +/- 10 |
| Nozzle | 200 +/- 10 |
| Melt Temperature °C | 200 +/- 10 |
| Back Pressure Bars | 10 +/- 5 |
| Injection Speed | 70 +/- 10% max |
| Holding Pressure | 30 +/- 10% of Max Injection Pressure |
| Mold Temperature °C | 40 +/- 20 |
| Hot Runner °C | 180 +/- 10 |
GUIDELINES FOR EXTRUSION

<table>
<thead>
<tr>
<th>Drying</th>
<th>Not needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature °C</td>
<td>Feed Zone 150 +/- 10</td>
</tr>
<tr>
<td>Zone 1</td>
<td>170 +/- 10</td>
</tr>
<tr>
<td>Zone 2</td>
<td>180 +/- 10</td>
</tr>
<tr>
<td>Adaptor/Die</td>
<td>190 +/- 10</td>
</tr>
<tr>
<td>Melt Temperature °C</td>
<td>190 +/- 10</td>
</tr>
</tbody>
</table>

PROCESSING GUIDE

*Multiflex®* brand G are styrenics thermoplastic elastomers, designed for medium/high compression set applications. Compatibility with polyolefin enables bi-material parts (continuous process or cold insert).

Please find below some indications to follow for processing *Multiflex®* G. Of course, this not replaces molder know-how, every tools having own specificity, but this document is useful for initial parameter choice.

**Background**

*Multiflex®* G can be transformed between 160°C to 210°C. In this temperature range, materials are stable, above, thermal degradation occurs, resulting in yellowing and significant odor emanation.

**Pre-drying**

As *Multiflex®* G is not humidity sensitive, pre-drying is not needed. In case of “incident”, pre-drying at 80–90°C during 1 to 2 hours is sufficient.

**Machinery cleaning**

High flow thermoplastic must be used, PEHD, PELD or PP.

**Coloring**

*Multiflex®* G is easily colorable by using color masterbatch based on PP, PE or ethylene copolymers (EVA).

**Recycling**

*Multiflex®* G is 100% recyclable without properties loss. We recommend a maximum level of 10% of recycling material in virgin material.

**INJECTION**

On a general point of view, viscosity of SEBS based material is principally dependent of applied shear, so *Multiflex®* G must be injected with high injection speed.

Due to their high fluidity, easy mold feeding for single or multiple cavities geometries are possible

**Processing parameters**

Screw:

Geometry: Standard injection machine, L/D > 20, Compression rate 2:1 to 3:1 (if higher, risk of thermal degradation). Screw speed between 100 to 150 rpm ensures thorough melting of the material without excessive temperature generation. Start with 120 rpm.

**Back pressure**

Must be between 7 and 15 bars: This will ensure a uniform melt without severe shear heating.

**Temperatures (°C)**

See Figure 1.

- Feed Zone: 150 +/- 10
- Zone 1: 170 +/- 10
- Zone 2: 190 +/- 10
- Nozzle: 200 +/- 10

**Injection speed**

Injection speed and fill time are highly dependent on part geometry, complexity and gate design. Faster speeds typically result in easier mold filling while lower speeds result in better surface in better surface appearance. High injection speed, around 70% of maximum injection speed should be used initially.

**Holding pressure**

Start with a pressure equivalent to 30% of maximum injection pressure. Excessive holding pressure can result in distortion in the area of the gate due to elastomeric characteristics of the material.

**Holding time**

Three seconds can be used to start to ensure sufficient time for gate freeze off. Holding time can be slowly reduced until changes in part appearance or weight occur.

**Mold**

Use conventional mold design (venting, finish, draft). Temperature: from 10 to 60°C, but typically chosen in the range of 40°C gives good results.

**Hot Runners**

Apply a temperature of 180°C +/- 10.

**EXTRUSION**

*Multiflex®* G can be processed on all extrusion machines for PVC, polyolefin. A screw, with a compression ratio of 3 is recommended.

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[Figure 1: Injection molding processing temperatures]
Temperatures (°C)
See Figure 2.

- Feed Zone: 150 +/- 10
- Zone 1: 170 +/- 10
- Zone 2: 180 +/- 10
- Die: 190 +/- 10

**Figure 2: Extrusion processing temperatures**

### PACKAGING INFORMATION

This product is available in a variety of container sizes. Contact your local Dow Corning sales representative for information about container sizes available in your area.

### LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

### HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

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