



Multiflex[®] G 52 A 41 M Z1747 Thermoplastic Elastomer

FEATURES & BENEFITS

- Soft touch
- Easy to color
- Low odor
- Translucent color
- Compatibility: PP/PE

APPLICATIONS

- Multiflex[®] G 52 A 41 M Z1747 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.

| Test* | Property | Unit | Result |
|---------------------------------|-----------------------------------------------------|-------------------|--------|
| ISO 868 | Hardness | Sh.A | 58 |
| ISO 1183/A | Density | g/cm ³ | 0.88 |
| MDA 179 | Spiral flow condition A | cm | 77 |
| ISO 37 Type 1 v = 500 mm/min | Tensile strength at 100% elongation cross direction | MPa | 1.7 |
| ISO 37 Type 1 v = 500 mm/min | Tensile strength at break cross direction | MPa | 9.8 |
| ISO 37 Type 1 v = 500 mm/min | Elongation at break cross direction | % | 770 |
| ISO 34 | Tear strength cross direction | kN/m | 35 |
| MDA 129 | Compression set 24h/23°C without annealing | % | 17 |
| MDA 129 | Compression set 24h/70°C without annealing | % | 38 |
| MDA 129 | Compression set 24h/100°C without annealing | % | 56 |

*ISO: International Standardization Organization

MDA (Méthode d'Analyse): Issued from ISO Standards

GUIDELINES FOR INJECTION MOLDING

| Drying | | Not needed |
|-----------------------|------------|--------------------------------------|
| 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

| Drying | | Not needed |
|---------------------|---------------|------------|
| Temperature °C | Feed Zone | 150 +/- 10 |
| | Zone 1 | 170 +/- 10 |
| | Zone 2 | 180 +/- 10 |
| | Adaptator/Die | 190 +/- 10 |
| Melt temperature °C | | 190 +/- 10 |

PROCESSING GUIDE

Multiflex® brand G elastomers 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. This does not replace molder experience, every mold having its 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). A screw speed between 100 to 150 rpm, ensures thorough melting of the material without excessive temperature generation. Start with 120 rpm.

Back pressure

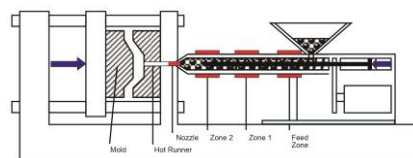
Must be between 7 and 15 bars. This will ensure a uniform melt without severe shear heating.

Temperatures (°C)

See Figure 1.

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

Figure 1: Injection molding processing temperatures



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 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) with temperatures 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

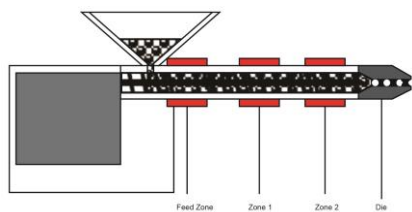
Multiflex® can be processed on all extrusion machines for PVC, polyolefin. A screw, with a compression ratio of 3 is recommended.

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



HANDLING PRECAUTIONS
PRODUCT SAFETY
INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEBSITE

USABLE LIFE AND STORAGE

Refer to product label for storage temperature conditions. Containers should be kept tightly closed and kept in cold storage at all times to extend shelf life. Shelf life is indicated by the “Use Before” date found on the product label.

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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