Product Information
Automotive and Transportation

Multiflex® G 60 A 11 B 14167 Thermoplastic Elastomer

FEATURES & BENEFITS

- UV stabilized
- Compatibility: PP/PE

APPLICATIONS

- *Multiflex*® G 60 A 11 B 14167 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	60
ISO 1183/A	Density	g/cm^3	1.17
MDA 179	Spiral flow condition A	cm	73
ISO 37 type 1 = 500 mm/min	Tensile strength at 100% elongation cross direction	Mpa	1.6
ISO 37 type 1 = 500 mm/min	Tensile strength at break cross direction	Mpa	7.4
ISO 37 type 1 = 500 mm/min	Elongation at break cross direction	%	805
ISO 34	Tear strength cross direction	kN/m	26
MDA 129	Compression set 24h/23°C without annealing	%	20
MDA 129	Compression set 24h/70°C without annealing	%	40
MDA 129	Compression set 24h/100°C without annealing	%	65

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

GUIDELINES FOR INJECTION MOLDING

Drying: *Multiflex*® TES 2803 SI1 BLACK 27489 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

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 TES Automotive G Range 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*® TES Automotive G Range. Of course, this does not replace molder experience, every tool having its own specificity, but this document is useful for initial parameter choice.

Background

Multiflex® Automotive G Range can be transformed between 190°C to 220–230°C. In this temperature range, materials are stable. Above this range thermal degradation occurs resulting in yellowing and significant odor emanation.

Pre-drying

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

Recycling

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

INJECTION

As a general point of view, viscosity of SEBS based material is principally dependent of applied shear, so *Multiflex*® Automotive G Range 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 a speed of 120 rpm.

Back pressure

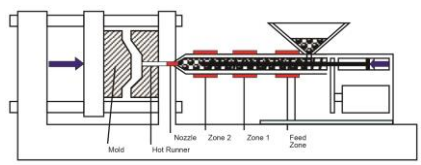
Must be between 7 and 15 bars. This will ensure a uniform melt without severe shear heating.

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. Start with an injection speed around 70% of maximum speed.

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, provides good results.

Hot Runners

Apply a temperature of 180°C +/- 10.

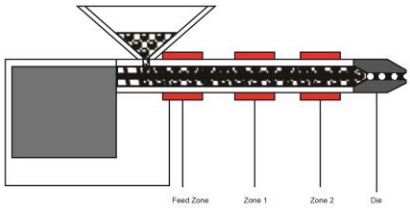
EXTRUSION

Multiflex® Automotive G Range 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.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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