

**MULTIFLEX® G 45 A 21 B Z2487 N0033 (A)**  
**MULTIFLEX® is a Thermoplastic Elastomer based Styrenic**

<b>TECHNICAL DATA SHEET STATUS</b>	Industrial		
<b>FEATURES</b>	Meets odor and fogging requirement for interior Color:Black		
<b>PROCESS</b>	Injection/Extrusion	<b>COMPATIBILITY</b>	PP/PE
<b>PROPERTIES</b>	<b>UNITS</b>	<b>STANDARDS</b>	<b>AVERAGE VALUES</b>
Hardness	Sh.A	ISO 868	<b>45</b>
Density		ISO R1183	<b>1.17</b>
Spiral flow condition A	cm	MDA 179	<b>&gt;85</b>
Spiral flow condition C	cm	MDA 179	<b>54</b>
Tensile strength at 100% elongation cross direction	Mpa	ISO 37 type1 v=500mm/min	<b>0.8</b>
Tensile strength at break cross direction	Mpa	ISO 37 type1 v=500mm/min	<b>4.2</b>
Elongation at break cross direction	%	ISO 37 type1 v=500mm/min	<b>760</b>
Tear strength cross direction	kN/m	ISO 34	<b>19</b>
Compression set 24h/23°C	%	ISO 815	<b>13</b>
Compression set 24h/70°C	%	ISO 815	<b>38</b>
Compression set 24h/100°C	%	ISO 815	<b>63</b>

<b>GUIDELINES FOR INJECTION MOULDING</b>		
Drying		<b>NOT Needed</b>
Barrel temperature °C	Feed Zone	<b>150 +/- 10</b>
	Transition	<b>170 +/- 10</b>
	Front	<b>190 +/- 10</b>
	Nozzle	<b>200 +/- 10</b>
Melt temperature °C		<b>200 +/- 10</b>
Back Pressure bars		<b>10 +/- 5</b>
Injection Speed		<b>70 +/- 10 % max</b>
Holding Pressure		<b>30 +/- 10 % of Max injection Pressure</b>
Mold Temperature °C		<b>40 +/- 20</b>
Hot runner °C		<b>180 +/- 10</b>
<b>GUIDELINES FOR EXTRUSION</b>		
Drying		<b>NOT needed</b>
Temperature °C	Feed Zone	<b>150 +/- 10</b>
	Zone 1	<b>170 +/- 10</b>
	Zone 2	<b>180 +/- 10</b>
	Adaptator/Die	<b>190 +/- 10</b>
Melt temperature °C		<b>190 +/- 10</b>

<b>LIMITATIONS</b>	This product is neither tested nor represented as suitable for medical or pharmaceutical uses.
<b>HEALTH AND ENVIRONMENTAL INFORMATION/HANDLING PRECAUTIONS</b>	Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use. You can obtain the safety data sheets from your local Multibase sales representative or Distributor

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\*The MDA (Méthode d'Analyse) named in this document are issued from the ISO Standards

Drawing up date : 2011/12

Revision Index : 9

MPR-M2-10-PACK TECHNIQUE version 5/08/10

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<p align="center"><b>HORIZONTAL BURNING FOLLOWING STANDARDS RENAULT D45 1333 – FMVSS 302 – MDA 149</b></p>
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**material : MULTIFLEX® G 45 A 21 B Z2487 N0033 (A)**

The test following the **RENAULT D45 1333** on injected plates of 2mm thickness allow us to classify the material as:

**Category : 1**  
**Burn-rate : 50 mm/min**  
**Type of combustion : E**

- **Types of combustion :**

*DO NOT BURN :* Type A : the material refuses to burn or dies out as soon as the burner is pulled away  
*SELF-EXTINGUISHING :* TYPE B : the material burns and combustion stops burning before the flame reached the first feature-reference mark  
Type C : the material stops burning before it has burned for 60 seconds from the start of timing and has not burned more than 50 mm from first feature-reference mark  
Type D : the material burns and the flame dies out between the two feature-reference marks, other than type C  
*BURN :* Type E : combustion continues until the second feature-reference mark

- **Category of combustion :**

**CATEGORY 1 :** When worst of the results is of the type A, B, C, or when of type D or E, with a burn-rate V or V' lower or equalises with 100 mm/min; the materials of this category are in conformity with standard F.M.V.S.S. 302.

**CATEGORY 2 :** when worst of the results is of the type D or E and that the burn-rate V or V' is higher than 100 mm/min; the materials of this category are not in conformity with standard F.M.V.S.S. 302.

F. merle  
Drawing up date : 2012/12  
Revision: 2011/03  
STATUS : DEFINITIVE  
MPR-M2-10-FICHE FMVSS - version 05/08/10

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## Processing guide for Multiflex® G

Multiflex® 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 190°C to 220-230°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 easy 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 dependant of applied shear, so Multiflex 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)

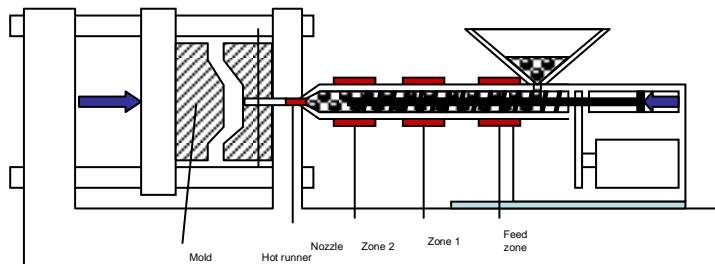
Screw speed between 100 to 150 rpm ensures thorough melting of the material without excessive temperature generation. Start with 120 rpm.

#### Back pressure

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

#### Temperatures (°C) :

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

3 second can be used to start to ensure sufficient time for gate freeze off.

Holding time can be slowly reduced until changes in part appearance of 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

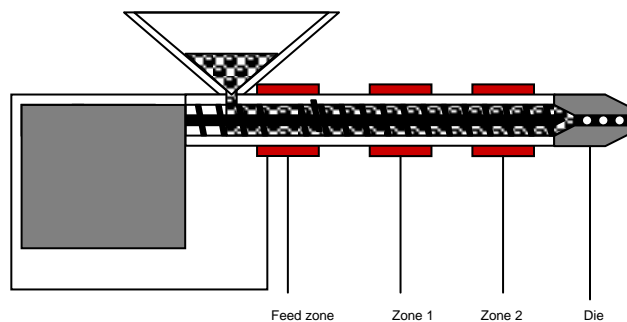
Apply a temperature of 180°C +/- 10

## EXTRUSION

Multiflex® G can be processed on all extrusion machines for PVC, polyolefin.

A screw, with a compression ratio of 3 is recommended.

<u>Temperature (°C) :</u>	Feed Zone	Zone 1	Zone 2	Die
	150 +/- 10	170 +/-10	180+/-10	190+/-10



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