GUIDELINES FOR INJECTION MOLDING

GRADES FOR AIRBAG APPLICATIONS

Guidelines for injection molding
Multiflex® grades for airbag applications

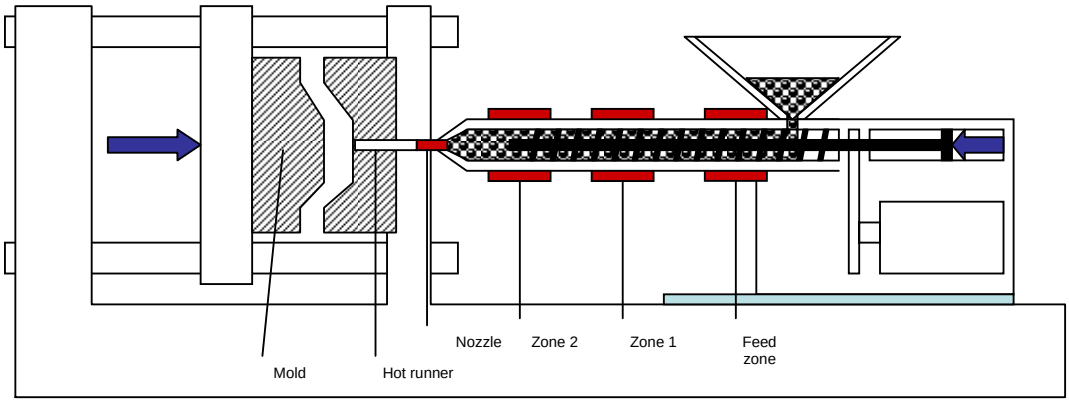
1. Injection molding machine

The Multiflex® can be processed on all injection molding machines. We recommend a screw with a compression ratio of around 3.

2. Shrinkage

The shrinkage of the Multiflex® TPO range is within 0,8 to 1,2 % (see the technical datasheets for the exact value).
The shrinkage of the Multiflex® TEO range is within 1,2-1,3 % (see the technical datasheets for the exact value).
The shrinkage of the Multiflex® TES range is within 1,2 to 2% depending on the hardness of the product (see the technical datasheets for the exact value).

3. Temperatures



MULTIFLEX® TPO	Feed zone	Zone 1	Zone 2	Nozzle	Mold
D 1047 BK 13718[1]	200°C	210°C	220°C	225°C	[2] 30-40°C (Fixed part) 20°C **(Moving part)**
D 1047 BK 14688 TPO 3202 ST2	230°C	240°C	240°C	250°C	
D 1047 BK 14689	200°C	210°C	220°C	225°C	
D 1048 BK 19330 D 1048 BK 18336	200°C	210°C	220°C	225°C	
TEO 2503 S BK TEO 3503 S BK	210°C	220°C	220°C	235°C	
TPO 4004 SW BLK PL22752	200°C	210°C	220°C	225°C	
TPO 7003 SW BLK	200°C	210°C	210°C	220°C	

[1] : decrease to 180-200°C in case of aspect issues for 2K airbags.
[2] Lower T° on moving part is better for easier injection

MULTIFLEX® TES	Feed zone	Zone 1	Zone 2	Nozzle	Mold
G 60 A 530 BK RP 6568 J	220°C	225°C	230°C	240°C	30°C
TES 2403 SI1 BLK 23095 [1] TES 2803 SI1 BLK 23052	220°C	230°C	230°C	235°C	30-40°C (Fixed part) 20°C (Moving part)

MULTIFLEX® MR	Feed Zone	Zone 1	Zone 2	Nozzle	Mold
A 9402 MR (TES)	190°C	205°C	215°C	225°C	35°C
[2] A 9702 MR (TES) D 1047 MR (TPO) TES 2604 MI1 (TES)	250°C	260°C	260°C	270°C	50°C (Fixed part) 30°C (Moving part)
TPO 3004 MW (TPO) TES 3004 MI1 (TES) TES 2204 (TES)	220°C	230°C	230°C	240°C	50°C (Fixed part) 30°C (Moving part)

All temperatures are indications and are given with a tolerance of +/-20°C.
The maximum temperature is 260°C. Material degradation can occur above if residence time is important in barrel.

[1] We recommend to dry this material 2 hours at 80°c before the injection.
[2] This temperature is the best one to have the best appearance but 270°C is the maximum. Degradation can occur for these 3 specific materials above this temperature.

4. Injection/Screw speed

A medium injection speed should be sufficient, especially for TPO materials.
A medium to high injection speed is needed for TES materials, styrenic based need to be shear

5. Holding phase

It is recommended to set the packing and holding pressures/time as low as possible. This parameter is key for tear seam read through after paint. This parameter needs to be balanced between sufficient amount of pressure and time to reduce sink marks and tear seam read through (pressure / time as low as possible).

6. Drying

As Multiflex® is not moisture sensitive, it is not necessary to dry the material before processing.
However, if the material is accidentally stored in high humidity conditions, it is recommended to dry for 2h at 80°C.