

**TC4GPZ (GP/FG Series)**
**THERMOLAST® K**
**General purpose, fogging**
**Typical applications**

- Car mats
- Function and design elements
- Handles (tools, toolboxes, skipoles)
- Seals
- Soft touch surface (thumb wheels, push buttons, switches)

**Material advantages**

- Adhesion to PP
- Easy coloring
- Excellent mechanical properties
- Excellent processing behavior
- Fulfills specifications for automotive interior
- Pleasant surface feel (Soft touch)
- UL 94 HB listed

**Processing Method:** Extrusion, Injection Molding

**Product properties**

Compound name	TC4GPZ
Series	GP/FG
Color	black

**Mechanical properties**

Hardness Shore A	38 ShoreA	DIN ISO 7619
Density	1.100 g/cm <sup>3</sup>	DIN EN ISO 1183-1
Tensile Strength <sup>1</sup>	5.0 MPa	DIN 53504 / ISO 37
Elong. at Break S <sub>2</sub> <sup>1</sup>	750 %	DIN 53504 / ISO 37
Tear Resistance	11.0 N/mm	DIN ISO 34-1
Compr. Set 72h/RT	10 %	DIN ISO 815
Compr. Set 24h/70°C	32 %	DIN ISO 815
Compr. Set 24h/100°C	62 %	DIN ISO 815

<sup>1</sup> Deviating from ISO 37 standard test piece S<sub>2</sub> is tested with a traverse speed of 200 mm/min.

Odour test acc. VW PV 3900 (VW 50180) @ 40 °C (2) level 3.0 / @ 80° C (3) level 3.

 All values published in this data sheet are rounded average values.  
 Specification limits are based on three-fold standard deviation from the average value.

This datasheet is an extract of the KRAIBURG TPE program. Please contact KRAIBURG TPE to select the compound suitable for the requirements.

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**Processing Guideline Extrusion**

Cylinder temperature	160 - 180 - 200 °C; max. 230 °C (320 - 356 - 392 °F; max. 446 °F).
L/D ratio	At least 25
Compression ratio	At least 3.5 : 1
Screens / breaker plate	A breaker plate and a screen pack are generally recommended in the extruder configuration in order to increase pressure.
Die land	3 - 5 mm (0,12 - 0,16 in.)
Extruder Head	Ca. 180 °C (355 °F)
Die temperature	Ca. 190 - 180 °C (374 - 410 °F)
Screw geometry	Standard three-zone screw (e.g. polyolefin screw). The screw must be able to provide sufficient shearing.
Calibration	Generally not necessary; support elements may be required when extruding THERMOLAST® compounds with high hardness or when coextruding with standard thermoplastics.
Pre drying	Pre drying of the material is not necessary; if surface moisture forms as a result of changes in temperature, the material should be dried for 2 - 4 hours at 60 - 80 °C (140 - 175 °F).

**Processing Guideline Injection Molding**

Cylinder temperature	220 - 200 - 180 °C max. 250 °C (428 - 392 - 356 °F, max. 482 °F)
Hotrunner	Hot runner temperatures: 200 -250 °C (390 - 480 °F). The runner should be empty after a maximum of 2 - 3 shots.
Injection pressure	200 - 1000 bar (2900 - 14504 psi) (depending on the size and weight of the part).
Injection rate	In general, the fill time should not be more than 1–2 seconds.

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**Processing Guideline Injection Molding**

Hold pressure	We recommend to derive the optimum hold pressure from determining the solidification point, starting with 40 % - 60 % of the required injection pressure.
Back pressure	20 - 50 bar (285 - 710 psi); if colour batches are used, higher back pressure is necessary.
Screw retraction	If an open nozzle is used processing with screw retraction is advisable.
Mold temperature	25 - 40 °C (77 - 104 °F)
Pre drying	Pre drying of the material is not necessary; if surface moisture forms as a result of changes in temperature, the material should be dried for 2 - 4 hours at 60 - 80 °C (140 - 175 °F).
Needle shut-off	With materials < 50 Shore the use of a needle seal nozzle is advisable.
Screw geometry	Standard 3-zone polyolefine screw.
Residence time	The residence time is to be set as short as possible with a maximum of 10 minutes.
Cleaning recommendation	For cleaning and purging of the machine it is appropriate to use polypropylene or polyethylene. Machine must be PVC-free.

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