Processing Data Sheet **Ultradur®**

B 4406 G4

02/2026 **PBT-GF20 FR(17)**

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Product Information

Injection molding grade with 20 % glass fibers for parts requiring enhanced fire resistance (eg relay housings, plug-and-socket connectors, switches, lighting components).

Abbreviated designation according to ISO 1043: PBT-GF20 FR(17)

Product safety

Ultradur® melts are stable at temperatures up to 280°C and do not give rise to hazards due to molecular degradation or the evolution of gases and vapors. Like all thermoplastic polymers, however, Ultradur decomposes on exposure to excessive thermal stresses, e.g. when it is overheated or as a result of cleaning by burning off. At temperatures of > 290 °C can be emitted: carbon monoxide, tetrahydrofuran.
Under special fire conditions traces of other toxic substances are possible. Formation of further decomposition and oxidation products depends upon the fire conditions.
When Ultradur® is properly processed and there is adequate suction at the die no risks to health are to be expected.
Additional safety information can be found in the safety data sheets of the individual products.
Safety data sheets can be requested from the Ultraplaste Infopoint at ultraplaste.infopoint@basf.com.

Safety instructions

Provide suitable exhaust ventilation at the drying process and in the area surrounding the melt outlet of processing machines.
Closed containers should only be opened in well-ventilated areas.
Ensure thorough ventilation of stores and work areas.

When incorrectly processing an unpleasant odour can be produced, especially when the recommended processing parameters are exceeded.
Check
- Moisture content of pellets
- Melt temperature
- Residence time

When there is a strong odour, immediately check processing parameters, ventilate the area well and recheck moisture content of material. If necessary stop processing and redry the material.

Any short stoppages in production, it is recommended that you inject material into the mould not purge an air shot.
It is advisable to dispose of purgings etc into water containers.

Physical form and storage

Standard packaging includes the 25-kg-bag, the 1000 kg octabin (octagonal container) or the 1000 kg big bag. Other forms of packaging are possible subject to agreement. All containers are tightly sealed and should be opened only immediately prior to processing. Further precautions for preliminary treatment and drying are described in the processing section of the brochure. The bulk density is about 0,7 to 0,8g/cm³.
Ultradur® can be stored for a longer period of time in dry, well vented rooms without causing problems in processing.
Ultradur® should generally have a moisture content of less than 0,04% when being processed.
In order to ensure reliable production, therefore, pre-drying should generally be the rule and the machine should be loaded via a closed conveyor system. Appropriate equipment is commercially available. Pre-drying is also for the addition of batches, e.g. in the case of inhouse pigmentation.
In order to prevent the formation of condensed water, containers stored in unheated rooms must only be opened when they have attained the temperature prevailing in the processing area. This can possibly take a very long time.
Measurements have shown that the interior of a 25-kg bag originally at 5°C had reached the temperature of 20°C in the processing area only after 48 hours.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.
In order to check the availability of products please contact us or our sales agency.

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	Test method	Unit	Values
Properties			
Polymer abbreviation	-	-	**PBT-GF20 FR(17)**
Density	ISO 1183	kg/m³	**1600**
Melt volume rate MVR 275 °C/2.16 kg	ISO 1133	cm³/10min	**11**
Drying			
Moisture, max.	-	%	**0.04**
Dryer temperature [1)]	-	°C	**80 - 120**
Drying time	-	h	**4**
Injection molding			
Melt temperature range	-	°C	**250 - 275**
Melt temperature, optimal	-	°C	**260**
Mold temperature range	-	°C	**60 - 100**
Mold temperature, optimal	-	°C	**80**
Residence time, max.	-	min	**10**
Machine Settings			
Temperature hopper throat	-	°C	**80**
Cylinder temperature 1 (feed zone)	-	°C	**250**
Cylinder temperature 2 (compression)	-	°C	**255**
Cylinder temperature 3 (metering-zone, in front of the screw)	-	°C	**260**
Cylinder temperature 4 (nozzle)	-	°C	**260**
Peripheral screw speed	-	m/s	**≤ 0.25**
Shrinkage			
Molding shrinkage (parallel)	ISO 294-4	%	**0.50**
Molding shrinkage (normal)	ISO 294-4	%	**1.30**
Molding shrinkage, free, longitudinal, plate, with film gate [2)]	-	%	**0.3**
Molding shrinkage, free, transversal, plate with film gate [2)]	-	%	**1.2**

Footnotes
1) Dry air dryer or vacuum dryer
2) Plate 150 x 150 x 3 mm, film gated

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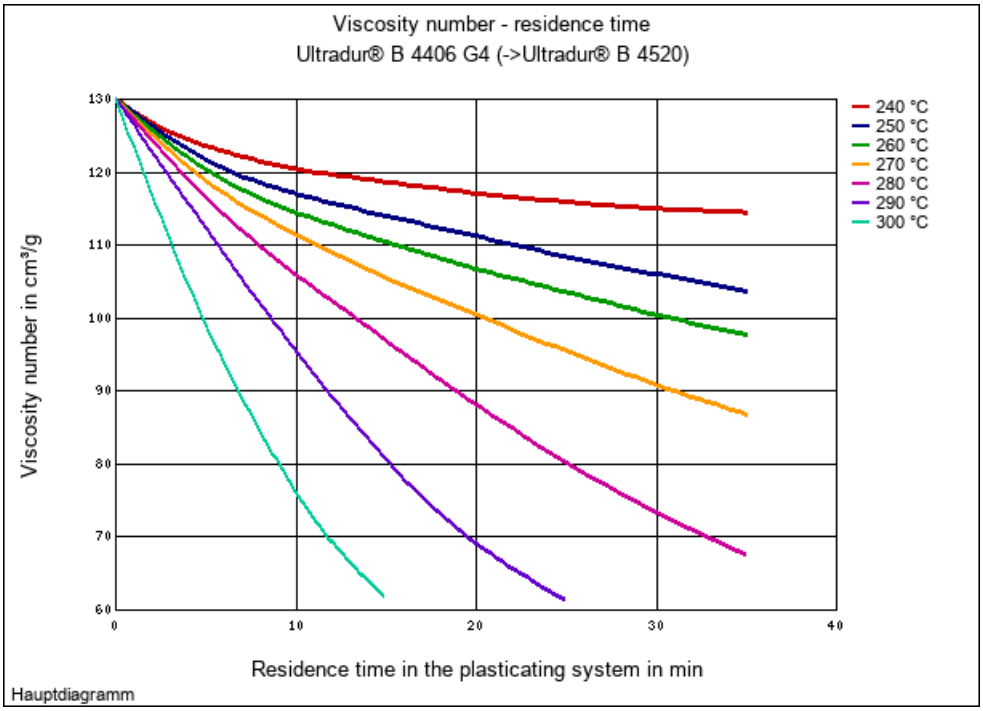
VISCOSITY NUMBER - RESIDENCE TIME



Unnecessarily high melt temperatures and excessively long residence times of the melt in the cylinder and the hot runner can bring about molecular degradation.
The figure shows an example (Ultradur® B4520) illustrating how the viscosity number acts as a measure of the molecular weight as a function of the melt temperature and residence time. Based on experience material degradation of less than 10 % based on the measured viscosity in solution of the granules and the molding is tolerable. In the event of values higher than this the processing and drying parameters should be checked.

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