Product Information **Ultradur®**

B 4300 K4

11/2024 **PBT-GB20**

Product description

Injection molding grade with 20 % glass beads for low-warpage technicalparts (e.g.precision parts for optical equipment, fuel level sensors, gas meter housings).

Abbreviated designation according to ISO 1043: PBT-GB20

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.
Further safety information see safety data sheet of individual product.
Safety data sheet could be ask for at the Ultra-Infopoint under tel: 0621/60-78780.

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.

BASF SE
67056 Ludwigshafen, Germany

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Product Information

We create chemistry

Typical values for uncoloured product at 23 °C[1)]	Test method	Unit	Values[2)]
Properties			
Polymer abbreviation	-	-	**PBT-GB20**
Density	ISO 1183	kg/m³	**1450**
Viscosity number (solution 0,005 g/ml Phenole/1,2 Dichlorbenzol 1:1)	ISO 307, 1157, 1628	cm³/g	**115**
natural	-	-	**+**
black	-	-	**+**
Water absorption, equilibrium in water at 23°C	similar to ISO 62	%	**0.4**
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	**0.2**
Processing			
Melt volume-flow rate MVR at 250 °C and 2.16 kg	ISO 1133	cm³/10min	**16**
Melting temperature, DSC	ISO 11357-1/-3	°C	**223**
Melt temperature, Injection moulding/Extrusion	-	°C	**250 - 275**
Mould temperature, Injection moulding	-	°C	**40 - 80**
Molding shrinkage (parallel)	ISO 294-4	%	**1.90**
Molding shrinkage (normal)	ISO 294-4	%	**1.90**
Melt volume-flow rate MVR at 250 °C and 2.16 kg	ISO 1133	cm³/10min	**16**
Flammability			
Burning Behav. at thickness d = 1.5 mm	IEC 60695-11-10	class	**HB**
Burning Behav. at thickness d = 0.75 mm	IEC 60695-11-10	class	**HB**
Automotive materials (thickness d ≥ 1mm) [3)]	ISO 3795, FMVSS 302	-	**+**
Flammability by electrical sources of ignition, Method BH, d = 4 mm	IEC 60707	class	**BH2**
Burning Behav. at thickness d = 0.75 mm	UL-94, IEC 60695	class	**HB**
Yellow Card available	UL-94, IEC 60695	-	**yes**
Burning Behav. at thickness d = 3 mm	UL-94, IEC 60695	class	**HB**
Yellow Card available	UL-94, IEC 60695	-	**yes**
Oxygen index	ISO 4589-1/-2	%	**23**
Mechanical properties			
Tensile modulus	ISO 527-1/-2	MPa	**3500**
Stress at break	ISO 527-1/-2	MPa	**48**
Strain at break	ISO 527-1/-2	%	**6**
Tensile creep modulus, 1000 h, strain ≤ 0.5%, 23°C	ISO 899-1	MPa	**1300**
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m²	**35**
Charpy unnotched impact strength (-30°C)	ISO 179/1eU	kJ/m²	**26**
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m²	**3**
Flexural modulus	ISO 178	MPa	**3400**
Flexural strength	ISO 178	MPa	**100**
Ball indentation hardness at 358 N and 30 s	ISO 2039-1	MPa	**150**
Izod notched impact strength ASTM D 256 (23°C)	ASTM D 256	J/m	**30**
Thermal properties			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	**65**
HDT B (0.45 MPa)	ISO 75-1/-2	°C	**170**
Max. service temperature (short cycle operation)	-	°C	**200**
Coefficient of linear thermal expansion, longitudinal (23-55)°C	ISO 11359-1/-2	E-6/K	**100**
Coefficient of linear thermal expansion, transverse (23-55)°C	ISO 11359-1/-2	E-6/K	**100**
Thermal conductivity	DIN 52612-1	W/(m K)	**0.27**
Specific heat capacity	-	J/(kg*K)	**1150**

Footnotes
1) If product name or properties don't state otherwise.
2) The asterisk symbol '*' signifies inapplicable properties.
3) + = passed

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Typical values for uncoloured product at 23 °C[1)]	Test method	Unit	Values[2)]
Electrical properties			
Relative permittivity (100 Hz)	IEC 62631-2-1	-	**4**
Relative permittivity (1 MHz)	IEC 62631-2-1	-	**3.7**
Dissipation factor (100 Hz)	IEC 62631-2-1	E-4	**12**
Dissipation factor (1 MHz)	IEC 62631-2-1	E-4	**190**
Volume resistivity	IEC 62631-3-1	Ohm*m	**1E14**
Surface resistivity	IEC 62631-3-2	Ohm	**1E13**
Comparative tracking index, CTI, test liquid A	IEC 60112	-	**250**
Comparative tracking index, CTI M, test liquid B	IEC 60112	-	**125**
Electric strength K20/K20, (60*60*1 mm³)	IEC 60243-1	kV/mm	**37**

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