Preliminary Datasheet

Ultradur®

B 4441 G5

□▪**BASF**

The Chemical Company

11/2012   **PBT-GF25**

Product description

Injection molding grade with 25 % glass fibers optimized for the glow wire requirements acc. to IEC 60335; for parts requiring enhanced fire resistance (eg components for household appliances, connectors, power switches), halogen and antimon free.
Abbreviated designation according to ISO 1043-1: PBT FR(30)
CLASSIFICATION ACCORDING TO ISO 7792-1: Moulding Compound ISO 7792-PBT, MFGHLNR, 11-110, GF25

Physical form and storage

Standard packaging includes the 25-kg-bag and the 1000 kg octabin (octagonal container). 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.
Under normal conditions Ultradur can be stored for unlimited periods. Even at elevated temperatures, e.g. 40°C in air, and under the action of sunlight and weather no decomposition reactions occur.
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. Measturements 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.

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. In such cases gaseous decomposition products are formed. Decomposition accelerates above 350°C small quantities of aldehydes and saturated and unsaturated hydrocarbons are also formed. 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 or fax:0621/60-78730.

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.

Ultradur® B 4441 G5

The Chemical Company

Preliminary Datasheet [4)]

Typical values for uncoloured product at 23 °C[1)]	Test method[2)]	Unit	Values[3)]
Properties			
Polymer abbreviation	-	-	**PBT-GF25**
Density	ISO 1183	kg/m³	**1530**
Viscosity number (solution 0,005 g/ml Phenole/1,2 Dichlorbenzol 1:1)	ISO 307, 1157, 1628	cm³/g	**105**
Water absorption, saturation in water at 23°C	similar to ISO 62	%	**0.4**
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	**0.20**
Processing			
Melting temperature, DSC	ISO 11357-1/-3	°C	**223**
MVR 275 °C/2.16 kg	ISO 1133	cm³/10min	**15**
Melt temperature, injection moulding/extrusion	-	°C	**260 - 280**
Mould temperature, injection moulding	-	°C	**60 - 100**
Molding shrinkage (parallel)	ISO 2577, 294-4	%	**0.44**
Molding shrinkage (normal)	ISO 2577, 294-4	%	**1.24**
Thermal properties			
Deflection temp. 1.8 (HDT A)	ISO 75-1/-2	°C	**210**
Deflection temp. under load 0.45 MPa (HDT B)	ISO 75-1/-2	°C	**220**
RTI electrical (tickness 1.5 mm)	UL-746B	°C	**140**
Flammability			
UL 94 rating (thickness)	UL-94, IEC 60695	class (mm)	**V-0 (0.4)**
UL 94 rating (thickness)	IEC 60695-11-20	class (mm)	**5VA (1.5)**
Hot wire ignition HWI (thickness)	ASTM D 3874-88	class (mm)	**2 (0.75)**
High-current arc ignition HAI (thickness)	UL 746A (UL746A)	class (mm)	**0 (0.4)**
Fire/ignition performance (UL94+HAI+HWI), min. thickness [5)]	UL746C	mm	**0.4**
GWFI (thickness)	IEC 60695-2-12	°C (mm)	**960 (1)**
GWIT (thickness)	IEC 60695-2-13	°C (mm)	**775 (1)**
Limiting Oxygen Index (LOI)	ISO 4589-1/-2	%	**38**
Specific optical density of smoke Ds max. (20 min), 25kW/m², 2mm	EN ISO 5659-2	-	**430**
Toxicity of smoke CIT NLP acc. to CEN/TS 45545-2	NF X70-100-1/-2	-	**0.18**
Electrical properties			
Relative permittivity (1 MHz)	IEC 60250	-	**3.6**
Dissipation factor (1 MHz)	IEC 60250	E-4	**137**
Volume resistivity	IEC 60093	Ohm*m	**1E14**
Surface resistivity	IEC 60093	Ohm	**>1E16**
CTI, solution A	IEC 60112	-	**525**
Mechanical properties			
Tensile modulus	ISO 527-1/-2	MPa	**9800**
Stress at break	ISO 527-1/-2	MPa	**110**
Strain at break	ISO 527-1/-2	%	**2.3**
Flexural modulus	ISO 178	MPa	**10000**
Flexural strength	ISO 178	MPa	**180**
Charpy unnotched impact strength, 23°C	ISO 179/1eU	kJ/m²	**45**
Charpy unnotched impact strength, -30°C	ISO 179/1eU	kJ/m²	**47**
Charpy notched impact strength, 23°C	ISO 179/1eA	kJ/m²	**7**

Footnotes
1) If product name or properties don't state otherwise.
2) Specimens according to CAMPUS.
3) The asterisk symbol '*' signifies inapplicable properties.
4) The typical values of preliminary datasheets are not statistically firm.
5) For Electrical Insulation/Barrier with close proximity (<0.8 mm) to unisulated live parts according to UL 746C