

Feb 2004 UD B4406 G6

# Ultradur<sup>®</sup> B4406 G6

## Polybutylene Terephthalate (PBT)

**Product Description**

Ultradur B4406 G6 is a glass fiber reinforced grade of PBT for injection molding of components with increased fire safety requirements.

**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 necessary 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.

**Applications****Form supplied and storage**

Standard packaging includes the 25-kg-bag and the 1,000 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/cm<sup>3</sup>.

Under normal conditions Ultradur can be stored for unlimited periods. Even at elevated temperatures (e.g. 40°C) and under the action of sunlight and weather no decomposition reactions occur.

**Agency Approvals (Automotive, NSF, USP, FDA, etc.)****Product safety**

If this resin is overheated by exposure to abnormal processing temperatures and/or for extended time periods, decomposition products may include carbon monoxide, carbon dioxide, and tetrahydrofuran. BASF Corporation will not make its products available to customers for use in the manufacture of medical devices which are intended for permanent implantation in the human body or in permanent contact with internal bodily tissues or fluids. We at BASF take pride in our products, and our tradition of developing innovative applications in partnership with our customers. However, the possibility of being required to respond to unfounded litigation and/or claims arising out of concerns relating to such use presents an unacceptable risk to the company.

**Note**

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Typical Properties for uncolored products	Test Method ISO / IEC / ASTM	SI		English	
		Unit	Value	Unit	Value
<b>Features</b>					
Density	ISO 1183	kg/m <sup>3</sup>	1650	lb/in <sup>3</sup>	0.0596
Moisture absorption (50% R.H.)	ASTM D570	%	0.20	%	0.20
<b>Mechanical properties</b>					
Tensile stress at break	ISO 527-1, -2	MPa	150	psi	21000
Elongation at break	ISO 527-1, -2	%	2.3	%	2.3
Tensile modulus	ISO 527-1, -2	MPa	11300	psi	1640000
Charpy impact strength (+23°C)	ISO 179 /1eU	kJ/m <sup>2</sup>	60.0	ft-lb/in <sup>2</sup>	28.6
Charpy impact strength (-30°C)	ISO 179 /1eU	kJ/m <sup>2</sup>	55.0	ft-lb/in <sup>2</sup>	26.2
Charpy notched impact strength (+23°C)	ISO 179 /1eA	kJ/m <sup>2</sup>	10.0	ft-lb/in <sup>2</sup>	4.76
Izod notched impact strength (23 °C (73 °F))	ASTM D256	J/m	53.4	ft-lb/in	1.00
Izod notched impact strength (-40 °C (-40 °F))	ASTM D256	J/m	42.7	ft-lb/in	0.800
<b>Thermal properties</b>					
Vicat softening temperature (50°C/h 50N)	ISO 306	°C	223	°F	433
Temp. of deflection under load @ 0.45 MPa/ 66 psi	ISO 75-1, -2	°C	225	°F	437
Temp. of deflection under load @ 1.8 MPa/ 264 psi	ISO 75-1, -2	°C	205	°F	401
<b>Processing</b>					
Melt volume rate 250°C/2.16 kg	ISO 1133	cm <sup>3</sup> /10min	8.00	in <sup>3</sup> /10min	0.488
Melt temperature range, injection molding		°C	246 to 271	°F	475 to 520
Mold temperature		°C	60.0 to 98.9	°F	140 to 210
Mold shrinkage. Free, longitudinal <sup>1)</sup>	ASTM D955	cm/cm	0.0020	in/in	0.0020
Mold shrinkage. Free, transverse <sup>1)</sup>	ASTM D955	cm/cm	0.010	in/in	0.010
Pre-drying, temperature		°C	79 to 121	°F	175 to 250
Pre-drying, time		hr	3 to 8	hr	3 to 8
<b>Dielectric properties</b>					
Relative permittivity (100 Hz)	IEC 60250	-	3.90	-	3.90
Relative permittivity (1 MHz)	IEC 60250	-	3.90	-	3.90
Volume resistivity	IEC 60093	ohm-m	>1.0E+013	ohm-in	>3.9E+014
Surface resistivity	IEC 60093	ohms	1.0E+013	ohms	1.0E+013
<b>Flammability</b>					
UL 94 (0.750 mm)	UL 94	-	V-0	-	V-0
UL 94 (1.50 mm)	UL 94	-	V-0	-	V-0
UL 94 (3.00 mm)	UL 94	-	V-0	-	V-0

NB : no break <sup>1)</sup> Shrinkage depends on wall thickness, design of molding, gating and processing conditions

\*\* Properties of non-oriented cast film (2 mil thick)

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