Product description

Low-warpage, easy-flowing injection molding grade with 30 % glass fibres for technical parts, for which dimensional stability is very important (eg, housings, plug-and-socket connectors).

Abbreviated designation according to ISO 1043-1: PBT-ASA
CLASSIFICATION ACCORDING TO ISO 7792-1:
Moulding Compound ISO 7792-PBT-ASA, MGHLNR, 11-100, GF30

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.

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.

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® S 4090 G6

Product Information

Typical values for uncoloured product at 23 °C[1]	Test method	Unit	Values[2]
Properties			
Polymer abbreviation	-	-	**(PBT+ASA)-GF30**
Density	ISO 1183	kg/m³	**1470**
Filler content: Glass fiber (GF), glass balls (GB), Mineral (M)	-	%	**GF30**
Viscosity number (solution 0,005 g/ml Phenole/1,2 Dichlorbenzol 1:1)	ISO 307, 1157, 1628	cm³/g	**105**
natural	-	-	**+**
coloured	-	-	**+**
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	%	**0.20**
Processing			
Melt volume-flow rate MVR at 275 °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	**60 - 100**
Moulding shrinkage, free, longitudinal (plate with film gate 150*150*3 mm³)	-	%	**0.1**
Moulding shrinkage, free, transverse (plate with film gate 150*150*3 mm³)	-	%	**0.75**
Molding shrinkage (parallel)	ISO 2577, 294-4	%	**0.29**
Molding shrinkage (normal)	ISO 2577, 294-4	%	**0.75**
Flammability			
Burning Behav. at 1.6 mm nom. thickn.	IEC 60695-11-10	class	**HB**
Burning Behav. at thickness d = 0.8 mm	IEC 60695-11-10	class	**HB**
Automotive materials (thickness d>= 1mm) [3]	FMVSS 302	-	**+**
Mechanical properties			
Tensile modulus	ISO 527-1/-2	MPa	**9700**
Stress at break	ISO 527-1/-2	MPa	**125**
Strain at break	ISO 527-1/-2	%	**2.2**
Tensile creep modulus, 1000 h, strain <= 0,5%, 23°C	ISO 899-1	MPa	**6700**
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m²	**58**
Charpy unnotched impact strength (-30°C)	ISO 179/1eU	kJ/m²	**50**
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m²	**7**
Flexural strength	ISO 178	MPa	**183**
Ball indentation hardness at 961 N and 30 s	ISO 2039-1	MPa	**164**
Thermal properties			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	**175**
HDT B (0.45 MPa)	ISO 75-1/-2	°C	**210**
Max. service temperature (short cycle operation)	-	°C	**170**
Temperature index at 50% loss of tensile strength after 20000 h	IEC 216	°C	**110**
Temperature index at 50% loss of tensile strength after 5000 h	IEC 216	°C	**140**
Coefficient of linear thermal expansion, longitudinal (23-80)°C	ISO 11359-1/-2	E-6/K	**30**
Thermal conductivity	DIN 52612-1	W/(m K)	**0.29**
Specific heat capacity	-	J/(kg*K)	**1100**
Electrical properties			
Relative permittivity (100Hz)	IEC 60250	-	**3.8**
Relative permittivity (1 MHz)	IEC 60250	-	**3.7**
Dissipation factor (100 Hz)	IEC 60250	E-4	**30**
Dissipation factor (1 MHz)	IEC 60250	E-4	**180**
Volume resistivity	IEC 60093	Ohm*m	**1E14**
Surface resistivity	IEC 60093	Ohm	**1E14**
Comparative tracking index, CTI, test liquid A	IEC 60112	-	**500**
Comparative tracking index, CTI M, test liquid B	IEC 60112	-	**125**

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