

Product description

High viscosity extrusion grade especially designed for sheets for thermoforming, furthermore also suitable for extrusion of e.g. profiles and pipes.

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 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.

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.

Preliminary Datasheet ³⁾

Typical values for uncoloured product at 23 °C ¹⁾	Test method	Unit	Values ²⁾
Properties			
Density	ISO 1183	kg/m ³	1360
Viscosity number (solution 0,005 g/ml Phenole/1,2 Dichlorbenzol 1:1)	ISO 307, 1157, 1628	cm ³ /g	160
Processing			
Melt volume-flow rate MVR at 250 °C and 2.16 kg	ISO 1133	cm ³ /10min	8.5
Melting temperature, DSC	ISO 11357-1/-3	°C	220
Melt temperature, Injection moulding/Extrusion	-	°C	260 - 270
Mould temperature, Injection moulding	-	°C	40 - 80
Mechanical properties			
Tensile modulus	ISO 527-1/-2	MPa	2000
Yield stress, 50 mm/min	ISO 527-1/-2	MPa	40
Yield strain, 50 mm/min	ISO 527-1/-2	%	10
Nominal strain at break, 50 mm/min	ISO 527-1/-2	%	33
Stress at break	ISO 527-1/-2	MPa	44
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m ²	N
Charpy unnotched impact strength (-30°C)	ISO 179/1eU	kJ/m ²	120
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m ²	6.5
Charpy notched impact strength (-30°C)	ISO 179/1eA	kJ/m ²	3.5
Flexural strength	ISO 178	MPa	60
Flexural modulus	ISO 178	MPa	2000
Thermal properties			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	60
HDT B (0.45 MPa)	ISO 75-1/-2	°C	150
Coefficient of linear thermal expansion, longitudinal (23-55)°C	ISO 11359-1/-2	E-6/K	110
Coefficient of linear thermal expansion, transverse(23-55)°C	ISO 11359-1/-2	E-6/K	130
Specific heat capacity	-	J/(kg*K)	1.3
Electrical properties			
Comparative tracking index, CTI, test liquid A	IEC 60112	-	550
Other Properties			
O2-Permeation (23°C, 50%RH)	ASTM F1927 – 07	cm ³ *µm/(m ² *d*bar)	2530
O2-Permeation (23°C, 85%RH)	ASTM F1927 – 07	cm ³ *µm/(m ² *d*bar)	2470
O2-Permeation (38°C, 90%RH)	ASTM F1927 – 07	cm ³ *µm/(m ² *d*bar)	7230
H2O-Permeation (23°C, 85%RH)	ASTM F – 1249	g*µm/(m ² *d*85%RH)	453
Density, Apparent density,	ISO 60	g/cm ³	0.81

Footnotes

1) If product name or properties don't state otherwise.

2) The asterisk symbol "*" signifies inapplicable properties.

3) The typical values of preliminary datasheets are not statistically firm.

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