

Product description

Glass fiber reinforced injection molding grade for plastic parts in electronic components like housings for electronic control units or connectors. Ultramid EQ (Electronic Quality) materials offer a high purity regarding ionic and halogen containing compounds. This helps to minimize potential corrosion processes and to protect sensitive electronic components. The black colored product has a LS coloration (Laser Sensitive) and can be marked with Nd:YAG lasers

Physical form and storage

The product is supplied dry and ready to use in moisture-proof packaging. The material is in the form of cylindrical or flat pellets. Its bulk density is about 0,7 g/cm³. Standard packs are the special 25 kg bag and the 1000 kg bulk container (octagonal IBC=intermediate bulk container made from corrugated board with a liner bag). Subject to agreement other forms of packaging and shipment in tankers by road or rail are also possible. All containers are tightly sealed and should be opened only immediately prior to processing. To ensure that the perfectly dry material delivered cannot absorb moisture from the air the containers must be stored in dry rooms and always carefully sealed again after some of the material has been withdrawn. Ultramid® can be stored for a longer period of time in dry, well vented rooms without any change to properties. After longer storage times (> 3 months for IBC or > 2 years for bags) or if material from previously opened containers is used, drying is recommended to remove absorbed moisture. Containers stored in cold rooms should be allowed to equalise to normal temperature so that no condensation forms on the pellets.

Product safety

In case processing is done under conditions as recommended (cf. processing data sheet) melts are thermally stable and do not generate hazards by molecular degradation or the evolution of gases and vapors. Like all thermoplastic polymers the product decomposes on exposure to excessive thermal load, e.g. when it is overheated or as a result of cleaning by burning off. Further information is available from the safety data sheet.

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.

Product Information

Typical values for uncoloured product at 23 °C ¹⁾	Test method	Unit	Values ²⁾
Properties			
Polymer abbreviation	-	-	PA66-GF35
Density	ISO 1183	kg/m ³	1414
Viscosity number (0.5% in 96 % H ₂ SO ₄)	ISO 307, 1157, 1628	cm ³ /g	148
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	1.53
Water absorption, saturation in water at 23°C	similar to ISO 62	%	5.39
J quant. (Combustion IC)	Schoeniger IC	mg/kg	< 1
Cl quant. (Combustion IC)	Schoeniger IC	mg/kg	2
Br quant. (Combustion IC)	Schoeniger IC	mg/kg	< 1
Processing			
Melting temperature, DSC	ISO 11357-1/-3	°C	260
MVR 275 °C/5 kg	ISO 1133	cm ³ /10min	25
Melt temperature, injection moulding/extrusion	-	°C	280 - 300
Mould temperature, injection moulding	-	°C	80 - 90
Moulding shrinkage, constrained ³⁾	-	%	0.45
Molding shrinkage (parallel)	ISO 294-4	%	0.45
Molding shrinkage (normal)	ISO 294-4	%	1.06
Flowability, Flow length, Spiral d = 2 mm	BASF method	cm	27.4
Melt temperature	-	°C	290
injection molding, Melt temperature, recommended	-	°C	290
injection molding, Mold temperature, recommended	-	°C	80
Flammability			
UL 94 rating at 0.8 mm thickness	UL-94, IEC 60695	class	HB
Mechanical properties			dry / cond.
Tensile modulus	ISO 527-1/-2	MPa	11100 / 7850
Stress at break	ISO 527-1/-2	MPa	195 / 130
Strain at break	ISO 527-1/-2	%	3.3 / 6.2
Flexural modulus	ISO 178	MPa	10700 / 7600
Flexural strength	ISO 178	MPa	300 / 215
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m ²	80 / 92
Charpy unnotched impact strength (-30°C)	ISO 179/1eU	kJ/m ²	64 / -
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m ²	8.7 / 12.7
Charpy notched impact strength (-30°C)	ISO 179/1eA	kJ/m ²	7.7 / -
Izod notched impact strength (23°C)	ISO 180/A	kJ/m ²	10.8 / -
Thermal properties			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	250
HDT B (0.45 MPa)	ISO 75-1/-2	°C	260
Electrical properties			dry / cond.
Volume resistivity	IEC 62631-3-1	Ohm*m	1E13 / -
Surface resistivity	IEC 62631-3-2	Ohm	* / 1E15
Comparative tracking index, CTI, test liquid A	IEC 60112	-	- / 575

Footnotes

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

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

3) Test box with central gating, dimensions of base (107*47*1.5) mm, processing conditions: TM = 290°C, TW = 80°C

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