

Product description

Ultramid® A3UT41G5 R01 is a polyamide 66 based on a non-halogenated flame retardant system, reinforced with 25% of glass fiber, heat stabilized, for injection moulding. This grade offers excellent flame retardancy properties (UL94 V0, UL94 5VA, GWIT) combined with excellent processing, mechanical and electrical performance. The data provided are based on laboratory/experimental results. These data could be adjusted after industrial production.

Physical form and storage

The product is supplied in the form of granules with a bulk density of approx. 0.7 g/cm³. Standard packs are bag and bulk container (octagonal IBC=intermediate bulk container made from corrugated board with a liner bag). Other packaging materials and shipping in road or rail silo wagons are possible by agreement. The containers should only be opened immediately before processing or drying. To ensure that the delivered product absorbs as little moisture as possible, the containers should be stored in dry rooms and always carefully closed again after partial quantities have been withdrawn. In principle, the product can be stored for a long period of time. Containers stored in cold rooms should be equalized to ambient temperature before opening in order to avoid condensation on the granules. Regardless of the storage conditions, the product should be pre-dried according to our recommendations and the machine should preferably be loaded using a closed conveyor system.

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-GF25 FR(40)
Density	ISO 1183	kg/m ³	1380
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	1.8
Water absorption, 24 h in water, 23 °C	ISO 62	%	1.2
Processing			
Melting temperature, DSC	ISO 11357-1/-3	°C	258
Melt temperature, injection moulding/extrusion	-	°C	265 - 300
Mould temperature, injection moulding	-	°C	60 - 90
Molding shrinkage (parallel)	ISO 294-4	%	0.30
Molding shrinkage (normal)	ISO 294-4	%	1.00
Thermal properties			
Deflection temp. under load 1.8 MPa (HDT A)	ISO 75-1/-2	°C	246
Deflection temp. under load 0.45 MPa (HDT B)	ISO 75-1/-2	°C	260
Melting temperature, DSC	ISO 11357-1/-3	°C	258
Flammability			
UL 94 rating (thickness)	UL-94, IEC 60695	class (mm)	V-0 (0.8)
UL 94 rating (thickness)	UL-94, IEC 60695	class (mm)	V-0 (1.6)
UL 94 rating (thickness)	UL-94, IEC 60695	class (mm)	V-0 (3.2)
UL 94 rating (thickness)	IEC 60695-11-20	class (mm)	5VA (1.6)
GWFI (thickness)	IEC 60695-2-12	°C (mm)	960 (0.8)
GWFI (Thickness)	IEC 60695-2-12	°C (mm)	960 (1.6)
GWFI	IEC 60695-2-12	°C	960
Thickness	IEC 60695-2-12	mm	3.2
GWIT	IEC 60695-2-13	°C	750
thickness	IEC 60695-2-13	mm	0.8
GWIT	IEC 60695-2-13	°C	775
Thickness	IEC 60695-2-13	mm	1.6
Electrical properties			
			dry / cond.
Volume resistivity	IEC 62631-3-1	Ohm*m	1E12 / -
Surface resistivity	IEC 62631-3-2	Ohm	1E15 / -
CTI, solution A	IEC 60112	-	600 / -
Electric strength (d = 0.8 mm)	IEC 60243-1	kV/mm	35 / -
Mechanical properties			
			dry / cond.
Tensile modulus	ISO 527-1/-2	MPa	9600 / 5900
Stress at break	ISO 527-1/-2	MPa	140 / 88
Strain at break	ISO 527-1/-2	%	2.8 / 5.5
Flexural modulus	ISO 178	MPa	7700 / 4700
Flexural strength	ISO 178	MPa	220 / 135
Charpy unnotched impact strength, 23°C	ISO 179/1eU	kJ/m ²	65 / 63
Charpy notched impact strength, 23°C	ISO 179/1eA	kJ/m ²	9.5 / 8

Footnotes

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

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

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