

Product description

Ultramid® Advanced N25EM9 is a mineral filled PPA material with high mechanical strength and good processability. In addition, this grade has excellent surface smoothness and dimensional stability, making it very suitable for injection molding applications where size precision, low warpage or dust control is required. This grade is also compatible with surface mounting technology due to high heat resistance and low water uptake.

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air the containers must be stored in dry rooms and always carefully sealed again after some of the material has been withdrawn.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.

Typical values for uncoloured product at 23 °C ¹⁾	Test method	Unit	Values ²⁾
Properties			
Polymer abbreviation	-	-	PA9T MF45%
Density	ISO 1183	kg/m ³	1560
Viscosity number (0.5% in 96% H ₂ SO ₄)	ISO 307, 1157, 1628	cm ³ /g	80
Water absorption, 24 h in water, 23°C	ISO 62	%	0.18
Processing			
Melting temperature, DSC	ISO 11357-1/-3	°C	305
MVR 325 °C/2.16 kg	ISO 1133	cm ³ /10min	85
Molding shrinkage (parallel)	ISO 294-4	%	0.20
Molding shrinkage (normal)	ISO 294-4	%	0.70
Melt temperature, injection moulding/extrusion	-	°C	300 - 330
injection molding, Melt temperature, recommended	-	°C	320
Mould temperature, injection moulding	-	°C	80 - 120
injection molding, Mold temperature, recommended	-	°C	90
Mechanical properties			dry / cond.
Tensile modulus	ISO 527-1/-2	MPa	13800 / -
Stress at break	ISO 527-1/-2	MPa	106 / -
Strain at break	ISO 527-1/-2	%	1 / -
Flexural modulus	ISO 178	MPa	13000 / -
Flexural strength	ISO 178	MPa	167 / -
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m ²	29 / -
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m ²	1.8 / -
Thermal properties			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	218
HDT B (0.45 MPa)	ISO 75-1/-2	°C	268
Coefficient of linear thermal expansion, longitudinal (23-55)°C	ISO 11359-1/-2	E-6/K	16 - 19
Coefficient of linear thermal expansion, transverse (23-55)°C	ISO 11359-1/-2	E-6/K	52 - 55
Electrical properties			dry / cond.
Dissipation factor (2.5 GHz)	IEC 60250	-	0.008 / -
Relative permittivity (2.5 GHz)	IEC 60250	-	3.75 / -
Volume resistivity	IEC 62631-3-1	Ohm*m	2E14 / -
Surface resistivity	IEC 62631-3-2	Ohm	-

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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