

Product description

The product is a halogen free flame retardant high temperature polyamide with high flowability, high temperature resistance for surface mount technology (SMT), excellent mechanical properties and high dimension stability, which all make it a perfect fit for E&E applications, especially various thin wall connectors and sockets.

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the containers should be stored in dry rooms and always carefully closed again after partial quantities have been withdrawn.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	-	-	PA9T-GF35 FR
Density	ISO 1183	kg/m ³	1490
Viscosity number (0.5% in 96 % H ₂ SO ₄)	ISO 307, 1157, 1628	cm ³ /g	70
Processing			
Melting temperature, DSC	ISO 11357-1/-3	°C	305
Melt temperature, injection moulding/extrusion	-	°C	310 - 340
Mould temperature, injection moulding	-	°C	100 - 160
Molding shrinkage (parallel)	ISO 294-4	%	0.20
Molding shrinkage (normal)	ISO 294-4	%	0.80
MVR 325 °C/2.16 kg	ISO 1133	cm ³ /10min	25
Flammability			
UL 94 rating at 0.2 mm thickness	UL-94, IEC 60695	class	V-0
UL 94 rating at 0.4 mm thickness	UL-94, IEC 60695	class	V-0
Mechanical properties			dry / cond.
Tensile modulus (23°C)	ISO 527-1/-2	MPa	12500 / -
Stress at break (23°C)	ISO 527-1/-2	MPa	150 / -
Strain at break (23°C)	ISO 527-1/-2	%	2 / -
Flexural modulus (23°C)	ISO 178	MPa	12200 / -
Flexural strength	ISO 178	MPa	230 / -
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m ²	60 / -
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m ²	13 / -
Thermal properties			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	275
Coefficient of linear thermal expansion, longitudinal (23-55)°C	ISO 11359-1/-2	E-6/K	12 - 16
Coefficient of linear thermal expansion, transverse (23-55)°C	ISO 11359-1/-2	E-6/K	60 - 64
Electrical properties			dry / cond.
Dissipation factor (2.5 GHz)	IEC 60250	-	0.012 / -
Relative permittivity (2.5 GHz)	IEC 60250	-	3.6 / -

Footnotes

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

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