GRILAMID L16 GM NATURAL

Grilamid L16 GM is a low-viscostiy, non-reinforced PA 12 grade, UV- and heat-stabilized. The modification with a crystallization regulator causes a quickly freeze and a fine, crystalline structure.

Due to its good flowability, Grilamid L16 GM is especially suitable for thinwalled injection moulding applications.

Mechanical Properties

		Unit	Standard	State	Grilamid L 16 GM
Density		ISO 1183	g/cm^3	dry	1.01
Tensile E-Modulus	(1 mm/min)	ISO 527	N/mm^2	conditioned	1100
Tensile strength at yield	(50 mm/min)	ISO 527	N/mm^2	conditioned	45
Elongation at yield	(50 mm/min)	ISO 527	%	conditioned	15
Tensile strength at break	(50 mm/min)	ISO 527	N/mm^2	conditioned	50
Elongation at break	(50 mm/min)	ISO 527	%	conditioned	>50
Impact strength	(Charpy, 23°C)	ISO 179/1eU	kJ/m^2	conditioned	>100
Impact strength	(Charpy, -30°C)	ISO 179/1eU	kJ/m^2	conditioned	>100
Notched impact strength	(Charpy, 23°C)	ISO 179/1eA	kJ/m^2	conditioned	6
Notched impact strength	(Charpy, -30°C)	ISO 179/1eA	kJ/m^2	conditioned	5
Ball indentation hardness		ISO 2039-1	N/mm^2	conditioned	70

Thermal properties

Melting temperature	(DSC)	ISO 3146-C	°C	dry	178
Heat deflection temp.					
HDT/A	(1.80 N/mm^2)	ISO 75	°C	dry	50
HDT/B	(0.45 N/mm^2	ISO 75	°C	dry	130
Therm. exp. coef.					
long	(23-80°C)	DIN 53752	10^{-4}/K	dry	1.2
trans	(23-80°C)	DIN 53752	10^{-4}/K	dry	1.4
Max. usage temperature	long term[1)]		°C	dry	90-110
Max. usage temperature	short term		°C	dry	140

[1)] According to load

Electrical properties

Dielectric permittivity	1MHz	IEC250/ VDE0303-4	-	conditioned	3
Dielectric loss factor	1MHz	IEC250/ VDE0303-4	-	conditioned	400
Dielectric strength	K20/P50	IEC243-1/ VDE0303-2	kV/mm	conditioned	32
Comp. tracking index	CTI	IEC112/ VDE0303-1	V	conditioned	600
Spec. Volume resistivity		IEC93/ VDE 0303-3	Ω-cm	conditioned	10^{14}
Spec. Surface resistivity		VDE0303-3	Ω	conditioned	10^{13}

Behavoir towards external influences

		Unit	Standard	State	Grilamid L 16 GM
Flammability	(0.8 mm)	UL 94		class	HB
Water absorption	(23°C/sat.)	DIN 53495	%		1.5
Moisture absorption	(23°C/50% r.h.)	acc.DIN 53495	%		0.4

The test values for "conditioned" were attained on test pieces stored according to ISO 1110.

PROCESSING

Pre-treatment

Grilamid L16 GM is supplied ready for processing. Granules which have been exposed to the atmosphere for a longer period (more than 2 to 4 hours), should be predried before processing.
We recommend the following drying conditions.

a) Convection drying (Dried air)
- Dew point below -25°C
- Air temperature 70°C
- Drying time 8 to 12 hours

b) Vacuum drier
- Temperature 80 to 100°C
- Drying time 8 to 12 hours

Before opening the drier the temperature should be reduced to ≤ 80°C.

Injection moulding

For the processing of Grilamid L16 GM a conventional three-zone screw with a non-returne valve is recommended. The ideal screw length is between 18 to 20 D.
Self-closing nozzles prevent the melt to flow out of the head.

Melt temperature: 210 to 250°C
Mould tool temperature: 40 to 80°C

Delivery form

Grilamid L16 GM is supplied as cylindrical granules, packed in moisture-proof bags containing 25 kg net; ready for processing

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