

Product Information

VESTAMID® L-GF30 BK E70285

GLASS-FIBER REINFORCED, LASER-WELDABLE POLYAMIDE 12

VESTAMID® L-GF30 BK E70285 is a glass fiber reinforced, heat-stabilized PA 12 compound with good IR laser transparency for injection molding. The material contains about 30% glass fibers, an ageing protective agent and processing aid for a fast and even form filling.

VESTAMID® L-GF30 BK E70285 is laser-weldable by a diode-pumped or solid-state laser in the range of $\lambda = 808\text{--}1064\text{ nm}$. Using glass fiber reinforcement the strength and the heat deflection temperature are significantly increased.

Further advantages of VESTAMID® L-GF30 BK E70285 are the characteristic properties of polyamide 12 as low water absorption, good dimensional stability and almost the same properties at changing ambient humidity.

VESTAMID® L-GF30 BK E70285 is supplied as cylindrical pellets ready for processing in moisture-proof bags.

The use of colorants may change property values.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

Key Features

Industrial Sector

Automotive and Mobility, Sustainable

Sustainability

Sustainable electricity

Processing

Injection molding

Delivery form

Pellets, Granules

Resistance to

Heat (thermal stability), UV / light / weathering, Oil / fuels

Electrical

Insulating

Conformity

Automotive

Additives

Glass fibers

Optics

Laser transparent

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® L_GF medium	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	23.6	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	5.1	kg CO ₂ eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	5.1	kg CO ₂ eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	0.1	Annual crop eq. y	ISO 14040, 14044
GWP savings as compared to 2023 reference	-2.3	kg CO ₂ eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	6800 / -	MPa	ISO 527
Tensile strength	122 / -	MPa	ISO 527
Stress at break	120 / -	MPa	ISO 527
Nominal strain at break, tB	6 / -	%	ISO 527
Charpy impact strength, +23°C	85 / -	kJ/m ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy impact strength, -30°C	100 / -	kJ/m ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy notched impact strength, +23°C	23 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	21 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	6080 / -	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	171 / -	MPa	ISO 178
Flexural strength, 23°C	188 / -	MPa	ISO 178

Flexural strain at flexural strength, 23°C	5 / -	%	ISO 178
Flexural stress at break, 23°C	185 / -	MPa	ISO 178
Flexural strain at break, 23°C	5 / -	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	178 / *	°C	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	165 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	175 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	175 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	175 / *	°C	ISO 306
Melting Temperature	178	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1240 / -	kg/m ³	ISO 1183
Water absorption	1.1 / *	%	Sim. to ISO 62
Humidity absorption	0.6 / *	%	Sim. to ISO 62
Density	1240	kg/m ³	ASTM D 792

Burning Behav.	dry / cond	Unit	Test Standard
UL Yellow Card available	yes / *	-	-
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-
Burning behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	7.2E12 / -	Ohm*m	IEC 62631-3-1

Surface resistivity, C, circular electrodes	>1E15 / -	Ohm per square	IEC 62631-3-2
Relative permittivity, 50Hz	4.1 / -	-	IEC 62631-2-1
Relative permittivity, 100Hz	4 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.2 / -	-	IEC 62631-2-1
Dissipation factor, 1MHz	290 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	48 / -	kV/mm	IEC 60243-1

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	11 / *	cm ³ /10min	ISO 1133
Temperature	250 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / *	%	ISO 294-4, 2577
Mold temperature	80 / *	°C	-

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	250	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Characteristics

Special Characteristics

High heat resistant

Features

Weldable

Color

Black

Additives

Antioxidant agent, Heat stabilizer, Processing aids