

Product Information

VESTAMID® Terra HS1851

MEDIUM VISCOSITY, GLASS FIBER-REINFORCED, EASILY DEMOLDABLE, HEAT-STABILIZED POLYAMIDE 610 COMPOUND FOR EFFICIENT INJECTION MOLDING



VESTAMID® Terra HS1851 is a glass fiber-reinforced, heat-stabilized, medium-viscosity PA 610 compound for injection molding application. The material contains about 20% glass fibers, an ageing protective agent and processing aid for a fast and even form filling.

The carbonamide groups (-CO-NH-) of the polyamides form hydrogen bridge bonds between the chains of the macromolecules, thereby substantially promoting crystallinity and increasing their strength, melting point, resistance to chemicals and even water absorption. This is characteristic of all semi-crystalline polyamides.

Because of its semi-crystalline morphology VESTAMID® Terra HS1851 provides a high impact strength, excellent chemical resistance (e.g. against greases, oils, alkalis and saline solutions), a low coefficient of friction and high abrasion resistance.

VESTAMID® Terra HS1851 is supplied as cylindrical granules, ready for processing, in moisture-proof bags.

VESTAMID® Terra is a group of new polyamides, the monomers for which are based entirely or partly on renewable raw materials.

VESTAMID® Terra HS is the polycondensation product of 1,6-hexamethylene diamine (H) and 1,10-decanedioic acid (sebacic acid—S). Because sebacic acid is derived from castor oil, VESTAMID® Terra HS is a material that is partly based on bio-based and renewable resources.

The use of colorants may affect property values.

Key Features

Industrial Sector

Automotive and Mobility, Sustainable

Sustainability

Contains renewable resources

Processing

Injection molding

Delivery form

Pellets, Granules

Resistance to

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

Electrical

Insulating

Conformity

Contains renewable resources, Automotive

Additives

Glass fibers

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	6000 / -	MPa	ISO 527
Tensile strength	131 / -	MPa	ISO 527
Stress at break	131 / -	MPa	ISO 527
Strain at break, B	3.8 / -	%	ISO 527
Charpy impact strength, +23°C	86 / -	kJ/m ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy impact strength, -30°C	78 / -	kJ/m ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy notched impact strength, +23°C	11 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	8.9 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	5870 / -	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	180 / -	MPa	ISO 178
Flexural strength, 23°C	210 / -	MPa	ISO 178
Flexural strain at flexural strength, 23°C	5 / -	%	ISO 178
Flexural stress at break, 23°C	209 / -	MPa	ISO 178
Flexural strain at break, 23°C	5.5 / -	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	223 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	49 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	204 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	222 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	221 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	219 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	26 / *	E-6/K	ISO 11359-1/-2

VESTAMID® Terra

Coeff. of linear therm. expansion, 23°C to 55 °C, normal	124 / *	E-6/K	ISO 11359-1/-2
Melting Temperature	223	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1220 / -	kg/m ³	ISO 1183
Water absorption	2.6 / *	%	Sim. to ISO 62
Density	1220	kg/m ³	ASTM D 792

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	21 / *	cm ³ /10min	ISO 1133
Temperature	250 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.4 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / *	%	ISO 294-4, 2577
Mold temperature	80 / *	°C	-
Melt temperature	50 / *	°C	-

Polymer analytics	dry	Unit	Test Standard
biogenic carbon content	61	%	ASTM D 6866

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	260	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Characteristics

Special Characteristics

Semi-crystalline, High heat resistant, Medium viscosity

Additives

Antioxidant agent, Heat stabilizer, Processing aids

VESTAMID® Terra

Features

Low coefficient of friction

Color

Natural color

Chemical Resistance

Alkali resistance, Grease resistance, Oil resistance, Aging resistance, General chemical resistance