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	**870000 / -**	psi	ISO 527
Tensile strength	**19000 / -**	psi	ISO 527
Stress at break	**19000 / -**	psi	ISO 527
Strain at break, B	**3.8 / -**	%	ISO 527
Charpy impact strength, +23°C	**40.9 / -**	ftlb/in^2	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy impact strength, -30°C	**37.1 / -**	ftlb/in^2	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy notched impact strength, +23°C	**5.23 / -**	ftlb/in^2	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**4.23 / -**	ftlb/in^2	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**851000 / -**	psi	ISO 178
Flexural stress at conv. deflection, 23°C	**26100 / -**	psi	ISO 178
Flexural strength, 23°C	**30500 / -**	psi	ISO 178
Flexural strain at flexural strength, 23°C	**5 / -**	%	ISO 178
Flexural stress at break, 23°C	**30300 / -**	psi	ISO 178
Flexural strain at break, 23°C	**5.5 / -**	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**433 / ***	°F	ISO 11357-1/-3
Glass transition temperature, DSC	**120 / ***	°F	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**399 / ***	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**432 / ***	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**430 / ***	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**426 / ***	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**1.44E-5 / ***	in/in/°F	ISO 11359-1/-2

Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**6.89E-5 / ***	in/in/°F	ISO 11359-1/-2
Melting Temperature	**433**	°F	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	**1.22 / -**	g/cm³	ISO 1183
Water absorption	**2.6 / ***	%	Sim. to ISO 62
Density	**1.22**	g/cm³	ASTM D 792

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	**21 / ***	cm³/10min	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	**176 / ***	°F	-
Melt temperature	**122 / ***	°F	-

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

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	**500**	°F	ISO 294
Injection Molding, mold temperature	**176**	°F	ISO 294
Injection Molding, injection velocity	**7.87**	in/s	ISO 294

Characteristics

Special Characteristics
Semi-crystalline, High heat resistant, Medium viscosity

Additives
Antioxidant agent, Heat stabilizer, Processing aids

Features
Low coefficient of friction

Color
Natural color

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