Product Information

VESTAMID® Terra HS2211 BK E70405

HIGH-VISCOSITY, HEAT- AND LIGHT-STABILIZED POLYAMIDE 610 COMPOUND FOR EXTRUSION

VESTAMID® Terra HS2211 BK E70405 is a polyamide 610 compound developed for the manufacturing of tubing systems with higher demands on heat resistance.

The melting range of VESTAMID® Terra HS2211 BK E70405 is about 40°C higher than PA 11 and PA 12 compounds and allows higher peak temperatures in use.

The compound is especially suitable for the extrusion of tubing systems that are exposed to high burst pressures at high service temperatures, e.g., hydraulic clutch lines. The process temperatures should be within a range of 240°C to 270°C.

VESTAMID® Terra HS2211 is delivered as cylindrical granules ready for processing in moisture-proof packaging.

VESTAMID® Terra HS is partly based on renewable raw materials and fills the performance gap between the commodity and the niche long-chain nylons.
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
Extrusion

Delivery form
Pellets, Granules

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

Electrical
Insulating

Conformity
Contains renewable resources, Automotive

Additives
Release agent, Unfilled

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**2500 / -**	MPa	ISO 527
Tensile strength	**66 / -**	MPa	ISO 527
Yield stress	**66 / -**	MPa	ISO 527
Yield strain	**4 / -**	%	ISO 527
Stress at 50% strain	**50 / -**	MPa	ISO 527
Stress at break	**50 / -**	MPa	ISO 527
Nominal strain at break, tB	**>50 / -**	%	ISO 527
Charpy impact strength, +23°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**5 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**5 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**2310 / -**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**80 / -**	MPa	ISO 178
Flexural strength, 23°C	**97 / -**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**6 / -**	%	ISO 178
Flexural stress at break, 23°C	**N / -**	MPa	ISO 178
Flexural strain at break, 23°C	**N / -**	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**222 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**42 / ***	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**54 / ***	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**155 / ***	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**215 / ***	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**195 / ***	°C	ISO 306

Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**95 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**94 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**222**	°C	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1060 / -**	kg/m³	ISO 1183
Water absorption	**3.5 / ***	%	Sim. to ISO 62
Humidity absorption	**1.7 / ***	%	Sim. to ISO 62
Density	**1060**	kg/m³	ASTM D 792

Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**19 / ***	cm³/10min	ISO 1133
Temperature	**275 / ***	°C	-
Load	**5 / ***	kg	-
Molding shrinkage, parallel	**1.6 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.3 / ***	%	ISO 294-4, 2577
Mold temperature	**80 / ***	°C	-
Melt temperature	**250 / ***	°C	-

Polymer analytics	**dry / cond**	**Unit**	**Test Standard**
Viscosity number	**220 / ***	cm³/g	ISO 307, 1157, 1628

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

Applications
Tube and hose

Special Characteristics
High impact strength, Light-stabilized, High heat resistant, Medium viscosity

Color
Black

Additives
Release agent, Light stabilizer, Heat stabilizer