VESTAMID®

Product Information

VESTAMID® LX9112 BK

CONDUCTIVE, HEAT-STABILIZED AND LIGHT-RESISTANT POLYAMIDE 12 COMPOUND FOR THE EXTRUSION COATING OF STEEL TUBING

VESTAMID® LX9112 BK is a heat-stabilized, conductive polyamide 12 compound, especially developed for the pore-free extrusion coating of steel tubing.

Compared to commonly use conductive extrusion compounds VESTAMID® LX9112 BK is distinguished by a significant lower melt viscosity and respectively by outstanding extrusion characteristics even in very thin coatings.

Steel tubing coated with VESTAMID® LX9112 BK meet the requirements of the US automotive industry to prevent electrostatic charge caused by flowing liquid fuels.

Due to the excellent impact strength and the good abrasion and chemical resistance of polyamide 12 the seamless coating with VESTAMID® LX9112 BK improves the corrosion resistance of steel tubing significantly.

VESTAMID® LX9112 BK is supplied as cylindrical pellets, ready for processing in moisture-proof packaging.
The use of colorants may affect 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, Industry and Engineering

Sustainability
Sustainable electricity

Processing
Extrusion, Coating

Delivery form
Pellets, Granules

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

Electrical
Anti-static, Conductive

Conformity
Automotive

Additives
Bonding agent, Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® L Compound high	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	**23.9**	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	**5.8**	kg CO_2 eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	**5.8**	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	**-2.1**	kg CO_2 eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**2120 / 1690**	MPa	ISO 527
Tensile strength	**54 / 48**	MPa	ISO 527
Yield stress	**54 / 48**	MPa	ISO 527
Yield strain	**4 / 13**	%	ISO 527
Stress at break	**41 / 39**	MPa	ISO 527
Nominal strain at break, tB	**32 / >50**	%	ISO 527
Charpy impact strength, +23°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy impact strength, 0°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy impact strength, -40°C	**N / -**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**4 / 3**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Charpy notched impact strength, 0°C	**4 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**3 / 3**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Charpy notched impact strength, -40°C	**4 / -**	kJ/m²	ISO 179/1eA

Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**1900 / 1700**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**62 / 50**	MPa	ISO 178
Flexural strength, 23°C	**74 / 62**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**7 / 7**	%	ISO 178
Flexural stress at break, 23°C	**N / N**	MPa	ISO 178
Flexural strain at break, 23°C	**N / N**	%	ISO 178
Flexural modulus, var. temp.	**2200 / -**	MPa	ISO 178

Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature	**176 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**44 / ***	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**52 / ***	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**150 / ***	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**174 / ***	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**156 / ***	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**105 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**124 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**176**	°C	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1120 / -**	kg/m³	ISO 1183
Water absorption	**1.11 / ***	%	Sim. to ISO 62
Humidity absorption	**0.65 / ***	%	Sim. to ISO 62
Density	**1120**	kg/m³	ASTM D 792

Electrical properties	**dry / cond**	**Unit**	**Test Standard**
Volume resistivity, V	**43000 / 29000**	Ohm*m	IEC 62631-3-1

Volume resistivity on bar, V	**1.00E3 / -**	Ohm*m	Sim. to IEC 62631-3-1
Surface resistivity, C, circular electrodes	**2E6 / 1.3E6**	Ohm per square	IEC 62631-3-2
Surface resistance, RSD	**1.00E6 / -**	Ohm	IEC 62631-3-2

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	**34 / ***	cm^3/10min	ISO 1133
Temperature	**240 / ***	°C	-
Load	**10 / ***	kg	-
Molding shrinkage, parallel	**1.2 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.5 / ***	%	ISO 294-4, 2577
Mold temperature	**60 / ***	°C	-
Melt temperature	**240 / ***	°C	-

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	**240**	°C	ISO 294
Injection Molding, mold temperature	**60**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/s	ISO 294

Characteristics

Special Characteristics
Light-stabilized, High heat resistant

Color
Black

Additives
Light stabilizer, Conductive agent, Heat stabilizer