VESTAMID®

Product Information

VESTAMID® LX9012

HEAT STABILIZED AND LIGHT RESISTANT POLYAMIDE 12 COMPOUND

VESTAMID® LX9012 has been especially developed for the extrusion and co-extrusion of ski upper and decorative films. Decoration on the bottom side of injection molded sports shoe soles is a further application field.

Films made of VESTAMID® LX9012 feature high transparency, good screen and sublimation printing, outstanding scratch resistance, and excellent impact strength at low temperatures. The semi-crystalline compounds based on PA 12 absorb only low quantities of water.

Therefore, molded parts show excellent dimensional stability, constantly high impact strength, low coefficient of friction and good chemical resistance at changing ambient humidity. VESTAMID® LX9012 is supplied as cylindrical granules, ready for processing in moisture-proof packaging.

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
Sustainable, Sports and Lifestyle

Sustainability
Sustainable electricity

Processing
Injection molding, Extrusion

Delivery form
Pellets, Granules

Optics
Transparent

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

Additives
Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® LX modified low	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044

Blue water consumption	**190.7**	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	**5.5**	kg CO_2 eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	**5.7**	kg CO_2 eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	**2.4**	Annual crop eq. y	ISO 14040, 14044
GWP savings as compared to 2023 reference	**-3.1**	kg CO_2 eq./kg	ISO 14040, 14044

Mechanical properties ISO	**dry / cond**	**Unit**	**Test Standard**
Tensile modulus	**160000 / -**	psi	ISO 527
Tensile strength	**4930 / -**	psi	ISO 527
Yield stress	**4930 / -**	psi	ISO 527
Yield strain	**5 / -**	%	ISO 527
Stress at 50% strain	**4350 / -**	psi	ISO 527
Stress at break	**6670 / -**	psi	ISO 527
Nominal strain at break, tB	**>50 / -**	%	ISO 527
Typical for the mat. nom. strain at br., tB	**240**	%	ISO 527
Charpy impact strength, +23°C	**N / -**	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	**N / -**	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, +23°C	**6.18 / -**	ftlb/in²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**7.14 / -**	ftlb/in²	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**131000 / -**	psi	ISO 178
Taber Abrasion Resistance, S33, 2x 500g	**< 15 / -**	mg/100 cycles	DIN 53754

Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature	**349 / ***	°F	ISO 11357-1/-3
Glass transition temperature, DSC	**102 / ***	°F	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**113 / ***	°F	ISO 75-1/-2

Temp. of deflection under load B, 0.45 MPa	**248 / ***	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**338 / ***	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**266 / ***	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**7.22E-5 / ***	in/in/°F	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**6.94E-5 / ***	in/in/°F	ISO 11359-1/-2
Melting Temperature	**349**	°F	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	**1.01 / -**	g/cm³	ISO 1183
Water absorption	**1.5 / ***	%	Sim. to ISO 62
Humidity absorption	**0.8 / ***	%	Sim. to ISO 62
Shore D hardness	**71[b] / 73[b]**	-	ISO 7619-1
Density	**1.01**	g/cm³	ASTM D 792
Shore D hardness, 1s, annealed	**72 / ***	-	ASTM D 2240

b: 3 seconds

Burning Behav.	dry / cond	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	**HB / ***	class	IEC 60695-11-10
Thickness tested	**0.0630 / ***	in	-
Burnin behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested	**0.1260 / ***	in	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	**1E12 / -**	Ohm*m	IEC 62631-3-1
Relative permittivity, 50Hz	**3.8 / -**	-	IEC 62631-2-1
Relative permittivity, 100Hz	**3.8 / -**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**3 / -**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**530 / -**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**280 / -**	E-4	IEC 62631-2-1

Dielectric strength, AC, S20/P50	**914 / -**	V/mil	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	**575 / -**	-	IEC 60112
Assessment of the insulation group	**II**	-	DIN EN 60664-1

Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	**1.3 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.3 / ***	%	ISO 294-4, 2577
Mold temperature	**176 / ***	°F	-
Melt temperature	**464 / ***	°F	-

Characteristics

Processing
Film extrusion, Profile extrusion

Special Characteristics
Semi-crystalline, Light-stabilized, High heat resistant

Features
Low coefficient of friction

Color
Natural color

Chemical Resistance
General chemical resistance

Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass) (23°C)
- ✔ Citric Acid solution (10% by mass) (23°C)

Bases

- ✔ Sodium Hydroxide solution (35% by mass) (23°C)
- ✔ Sodium Hydroxide solution (1% by mass) (23°C)
- ✔ Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

- ✔ Isopropyl alcohol (23°C)
- ✔ Methanol (23°C)
- ✔ Ethanol (23°C)

Hydrocarbons

- ✔ n-Hexane (23°C)
- ✔ Toluene (23°C)
- ✔ iso-Octane (23°C)

Ketones

- ✔ Acetone (23°C)

Ethers

- ✔ Diethyl ether (23°C)

Salt solutions

- ✔ Sodium Chloride solution (10% by mass) (23°C)
- ✔ Sodium Carbonate solution (20% by mass) (23°C)
- ✔ Sodium Carbonate solution (2% by mass) (23°C)

Other

- ✔ Ethyl Acetate (23°C)
- ✔ Hydrogen peroxide (23°C)
- ✔ Water (23°C)

Rheological calculation properties	dry	Unit	Test Standard
Min. melt temperature	**428**	°F	-
Max. melt temperature	**482**	°F	-