

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

LCA name of certificate

dry

[VESTAMID® LX modified low](#)

Unit

-

Test Standard

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	1100 / -	MPa	ISO 527
Tensile strength	34 / -	MPa	ISO 527
Yield stress	34 / -	MPa	ISO 527
Yield strain	5 / -	%	ISO 527
Stress at 50% strain	30 / -	MPa	ISO 527
Stress at break	46 / -	MPa	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 / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	13 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	15 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	900 / -	MPa	ISO 178
Taber Abrasion Resistance, S33, 2x 500g	< 15 / -	mg/100 cycles	DIN 53754

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	176 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	39 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	45 / *	°C	ISO 75-1/-2

Temp. of deflection under load B, 0.45 MPa	120 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	170 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	130 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	130 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	125 / *	E-6/K	ISO 11359-1/-2
Melting Temperature	176	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1010 / -	kg/m ³	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	1010	kg/m ³	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	1.6 / *	mm	-
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3.2 / *	mm	-

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	36 / -	kV/mm	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	80 / *	°C	-
Melt temperature	240 / *	°C	-

Characteristics

Processing

Film extrusion, Profile extrusion

Color

Natural color

Special Characteristics

Semi-crystalline, Light-stabilized, High heat resistant

Chemical Resistance

General chemical resistance

Features

Low coefficient of friction

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	220	°C	-
Max. melt temperature	250	°C	-