

Product Information

**VESTAMID® LX9012 T9**

**HEAT STABILIZED AND LIGHT RESISTANT POLYAMIDE 12 COMPOUND**

**VESTAMID® LX9012 T9** 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 T9 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 T9 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, Translucent

**Resistance to**

Heat (thermal stability), Hydrolysis / hot water, UV / light / weathering, Wear / abrasion, Fatigue resistance

**Additives**

Unfilled

**LCA-values**

LCA name of certificate

dry

[VESTAMID® LX modified low](#)

Unit

-

Test Standard

ISO 14040, 14044

LCA certifier	<a href="#">TÜV Rheinland</a>	-	ISO 14040, 14044
Blue water consumption	<b>190.7</b>	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	<b>5.5</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	<b>5.7</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	<b>2.4</b>	Annual crop eq. y	ISO 14040, 14044
GWP savings as compared to 2023 reference	<b>-3.1</b>	kg CO <sub>2</sub> eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	<b>1100 / -</b>	MPa	ISO 527
Tensile strength	<b>34 / -</b>	MPa	ISO 527
Yield stress	<b>34 / -</b>	MPa	ISO 527
Yield strain	<b>5 / -</b>	%	ISO 527
Stress at 50% strain	<b>30 / -</b>	MPa	ISO 527
Stress at break	<b>46 / -</b>	MPa	ISO 527
Nominal strain at break, tB	<b>&gt;50 / -</b>	%	ISO 527
Charpy impact strength, +23°C	<b>N / -</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	<b>N / -</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	<b>13 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / -</b>	-	-
Charpy notched impact strength, -30°C	<b>15 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / -</b>	-	-
Flexural modulus, 23°C	<b>900 / -</b>	MPa	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	<b>176 / *</b>	°C	ISO 11357-1/-3
Glass transition temperature, DSC	<b>39 / *</b>	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	<b>45 / *</b>	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>120 / *</b>	°C	ISO 75-1/-2

Vicat softening temperature A, 10 N, 50 K/h	<b>170 / *</b>	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>130 / *</b>	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>130 / *</b>	E-6/K	ISO 11359-1/-2
Melting Temperature	<b>176</b>	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	<b>1010 / -</b>	kg/m <sup>3</sup>	ISO 1183
Water absorption	<b>1.5 / *</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.8 / *</b>	%	Sim. to ISO 62
Shore D hardness	<b>71<sup>[b]</sup> / -</b>	-	ISO 7619-1
Density	<b>1010</b>	kg/m <sup>3</sup>	ASTM D 792
Shore D hardness, 1s, annealed	<b>72 / *</b>	-	ASTM D 2240

b: 3 seconds

Burning Behav.	dry / cond	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	<b>HB / *</b>	class	IEC 60695-11-10
Thickness tested	<b>1.6 / *</b>	mm	-
Burnin behav. at thickness h	<b>HB / *</b>	class	IEC 60695-11-10
Thickness tested	<b>3.2 / *</b>	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	<b>1E12 / -</b>	Ohm*m	IEC 62631-3-1
Relative permittivity, 100Hz	<b>3.8 / -</b>	-	IEC 62631-2-1
Relative permittivity, 1MHz	<b>3 / -</b>	-	IEC 62631-2-1
Dissipation factor, 100Hz	<b>530 / -</b>	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	<b>280 / -</b>	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	<b>36 / -</b>	kV/mm	Sim. to IEC 60243-1

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

#### Special Characteristics

Semi-crystalline, Light-stabilized, High heat resistant

#### Features

Low coefficient of friction

#### Color

Natural color

#### Additives

Light stabilizer, Heat stabilizer

#### Chemical Resistance

General chemical resistance