

Product Information

VESTAMID® L2170 OR E20005

HIGH VISCOSITY, HEAT- AND LIGHT-STABILIZED POLYAMIDE 12 RESIN

VESTAMID® L2170 OR E20005 has been designed especially for the extrusion of cable sheathings, but it can be used advantageously also for the manufacture of semi-finished products like tubes, rods, sheets and profiles.

As a partially crystalline Polyamide 12, VESTAMID® L2170 OR E20005 exhibits a low coefficient of friction which eases the installation of cables in ducts. Sheathings made of VESTAMID® L2170 OR E20005 protect direct buried cables from attack by termites and rodents, due to their tough and smooth surface finish.

Because of low water absorption parts produced from VESTAMID® L2170 OR E20005 maintain their dimension in environments with varying humidity levels, while maintaining a high toughness, a low coefficient of friction and good chemical resistance.

VESTAMID® L2170 OR E20005 is supplied as cylindrical granules, ready for processing, in moisture-proof bags.

Pigmentation may affect 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

Sustainability

Sustainable electricity

Processing

Injection molding, Extrusion

Delivery form

Pellets, Granules

Resistance to

Heat (thermal stability), UV / light / weathering

Electrical

Insulating

Additives

Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® L Compound low	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	25.7	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	6.1	kg CO ₂ eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	6.1	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	-2.5	kg CO ₂ eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	1650 / -	MPa	ISO 527
Tensile strength	46 / -	MPa	ISO 527
Yield stress	46 / -	MPa	ISO 527
Yield strain	4 / -	%	ISO 527
Stress at 50% strain	36 / -	MPa	ISO 527
Stress at break	55 / -	MPa	ISO 527
Nominal strain at break, 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	6 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	7 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	1570 / -	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	52 / -	MPa	ISO 178
Flexural strength, 23°C	65 / -	MPa	ISO 178
Flexural strain at flexural strength, 23°C	6.5 / -	%	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	178 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	44 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	50 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	110 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	175 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	148 / *	°C	ISO 306
Melting Temperature	178	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1020 / -	kg/m ³	ISO 1183
Water absorption	1.6 / *	%	Sim. to ISO 62
Humidity absorption	0.8 / *	%	Sim. to ISO 62
Shore D hardness	72 / -	-	ISO 7619-1
Density	1020	kg/m ³	ASTM D 792

Burning Behav.	dry / cond	Unit	Test Standard
UL Yellow Card available	yes / *	-	-
Burning behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-
Burning behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
Oxygen index	24 / *	%	ISO 4589-1/-2
Limiting Oxygen Index	24	%	ASTM D 2863

Glow Wire Flammability Index (GWFI)	930	°C	IEC 60695-2-12
GWFI - thickness tested	0.4	mm	-
Glow Wire Flammability Index (GWFI)	900	°C	IEC 60695-2-12
GWFI - thickness tested	0.75	mm	-
Glow Wire Flammability Index (GWFI)	825	°C	IEC 60695-2-12
GWFI - thickness tested	1.5	mm	-
Glow Wire Flammability Index (GWFI)	825	°C	IEC 60695-2-12
GWFI - thickness tested	3.0	mm	-
Glow Wire Ignition Temperature (GWIT)	900	°C	IEC 60695-2-13
GWIT - thickness tested	0.4	mm	-
Glow Wire Ignition Temperature (GWIT)	875	°C	IEC 60695-2-13
GWIT - thickness tested	0.75	mm	-
Glow Wire Ignition Temperature (GWIT)	800	°C	IEC 60695-2-13
GWIT - thickness tested	1.5	mm	-
Glow Wire Ignition Temperature (GWIT)	725	°C	IEC 60695-2-13
GWIT - thickness tested	3.0	mm	-
Hot Wire Ignition (HWI)	4	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	0.4	mm	-
Hot Wire Ignition (HWI)	4	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	0.8	mm	-
Hot Wire Ignition (HWI)	3	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	1.5	mm	-
Hot Wire Ignition (HWI)	2	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	3.0	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	9.2E12 / -	Ohm*m	IEC 62631-3-1
Surface resistivity, C, circular electrodes	8.4E14 / -	Ohm per square	IEC 62631-3-2

Relative permittivity, 50Hz	4.2 / -	-	IEC 62631-2-1
Relative permittivity, 100Hz	4.1 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3 / -	-	IEC 62631-2-1
Dissipation factor, 50Hz	670 / -	E-4	IEC 62631-2-1
Dissipation factor, 100Hz	700 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	353 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20	32 / -	kV/mm	IEC 60243-1
Dielectric strength, AC, P25/P25	37.3 / -	kV/mm	IEC 60243-1
Dielectric strength, DC, S20/S20	50 / -	kV/mm	IEC 60243-1/2
CTI, test solution A, 50 drops value	600 / -	-	IEC 60112
CTI, Performance Level Categories, PLC	0	class	ASTM D 3638
Dielectric strength, Short Time	36.9 / -	kV/mm	ASTM D 149
Volume resistivity	1E14 / -	Ohm*cm	ASTM D 257
Arc Resistance	4 / -	class	ASTM D 495

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	3.4 / *	cm ³ /10min	ISO 1133
Temperature	230 / *	°C	-
Load	2.16 / *	kg	-
Melt volume-flow rate, MVR	15 / *	cm ³ /10min	ISO 1133
Temperature	240 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.7 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.3 / *	%	ISO 294-4, 2577
Mold temperature	60 / *	°C	-
Melt temperature	240 / *	°C	-

VESTAMID®

Polymer analytics

Viscosity number

dry / cond

207 / *

Unit

cm³/g

Test Standard

ISO 307, 1157, 1628

Test specimen production

Injection Molding, melt temperature

dry

240

Unit

°C

Test Standard

ISO 294

Injection Molding, mold temperature

60

°C

ISO 294

Injection Molding, injection velocity

200

mm/s

ISO 294

Characteristics

Applications

Electrical and Electronical, IT and telecommunication, Tube and hose, Cable sheathing

Processing

Profile extrusion

Special Characteristics

Semi-crystalline, Light-stabilized, High heat resistant, High viscosity

Features

Low coefficient of friction, Termite and rodent resistance

Color

Orange

Additives

Light stabilizer, Heat stabilizer, Processing aids

Chemical Resistance

General chemical resistance