

Product Information

VESTAMID® LX9057 OR E20081

PA12 FR(30+40) - LOW-VISCOSITY, SELF-EXTINGUISHING PA12 COMPOUND, FREE OF HALOGEN



VESTAMID® LX9057 OR E20081 is a heat-stabilized compound with an efficient halogen-free flame retardant. Tested according to UL94, it complies with the flammability classification V-2.

The halogen-free formulation makes VESTAMID® LX9057 OR E20081 especially suitable for the electronic and cable industry.

VESTAMID® LX9057 OR E20081 can be used for injection molding as well as for wire extrusion coating.

The semi-crystalline compounds based on PA12 only absorb small amounts of water. Therefore manufactured parts exhibit excellent dimensional stability at changing ambient humidity, constant high toughness, low coefficient of friction and good chemical resistance.

Due to the presence of flame retardant the melt temperature should not exceed 240°C. We recommend melt temperatures of 200°C-220°C.

VESTAMID® LX9057 OR E20081 is supplied as cylindrical granules, ready for processing, in moisture-proof bags.

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

Sustainable, Industry and Engineering

Sustainability

Sustainable electricity

Processing

Injection molding, Extrusion

Delivery form

Pellets, Granules

Resistance to

Heat (thermal stability), Fire / burn

Additives

Flame retardant, Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® L Compound medium	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	25.6	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	6.0	kg CO ₂ eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	6.0	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	-2.4	kg CO ₂ eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	1200 / 820	MPa	ISO 527
Tensile strength	37 / 33	MPa	ISO 527
Yield stress	37 / 33	MPa	ISO 527
Yield strain	12 / 17	%	ISO 527
Stress at 50% strain	29 / 26	MPa	ISO 527
Stress at break	37 / 38	MPa	ISO 527
Nominal strain at break, tB	250 / 270	%	ISO 527
Charpy impact strength, +23°C	130 / N	kJ/m ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy impact strength, -30°C	69 / 122	kJ/m ²	ISO 179/1eU
Type of failure	C / C	-	-
Charpy notched impact strength, +23°C	3 / 7	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, -30°C	3 / 2	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Flexural modulus, 23°C	1180 / 840	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	35 / 24	MPa	ISO 178

Flexural strength, 23°C	45 / 35	MPa	ISO 178
Flexural strain at flexural strength, 23°C	8 / 9	%	ISO 178
Flexural stress at break, 23°C	N / N	MPa	ISO 178
Flexural strain at break, 23°C	N / N	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	176 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	40 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	55 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	130 / *	°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	136 / *	°C	ISO 306
Melting Temperature	176	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1080 / -	kg/m ³	ISO 1183
Water absorption	1.8 / *	%	Sim. to ISO 62
Humidity absorption	0.8 / *	%	Sim. to ISO 62
Shore D hardness	69 / -	-	ISO 7619-1
Density	1080	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.	V-2 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Burnin behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.4 / *	mm	-
Burning behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-

Burnin behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
Limiting Oxygen Index	30	%	ASTM D 2863
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested	0.4	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested	0.75	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested	1.5	mm	-
Glow Wire Flammability Index (GWFI)	960	°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	0.8	mm	-
Glow Wire Ignition Temperature (GWIT)	900	°C	IEC 60695-2-13
GWIT - thickness tested	0.4	mm	-
Glow Wire Ignition Temperature (GWIT)	750	°C	IEC 60695-2-13
GWIT - thickness tested	1.5	mm	-
Glow Wire Ignition Temperature (GWIT)	750	°C	IEC 60695-2-13
GWIT - thickness tested	3.0	mm	-
Hot Wire Ignition (HWI)	0	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	0.4	mm	-
Hot Wire Ignition (HWI)	0	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	0.8	mm	-
Hot Wire Ignition (HWI)	0	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	1.5	mm	-
Hot Wire Ignition (HWI)	0	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	3.0	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	7.4E11 / 9.3E9	Ohm*m	IEC 62631-3-1
Surface resistivity, C, circular electrodes	1.9E14 / 5.5E13	Ohm per square	IEC 62631-3-2
Relative permittivity, 50Hz	4.7 / 8	-	IEC 62631-2-1
Relative permittivity, 100Hz	4.5 / 7.5	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.2 / 3.5	-	IEC 62631-2-1
Dissipation factor, 50Hz	1070 / 2000	E-4	IEC 62631-2-1
Dissipation factor, 100Hz	920 / 1920	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	- / 537	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	35 / 36	kV/mm	IEC 60243-1
Dielectric strength, AC, P25/P25	35.4 / -	kV/mm	IEC 60243-1
Thickness tested	1 / -	mm	-
Dielectric strength, DC, S20/S20	47 / -	kV/mm	IEC 60243-1/2
Thickness tested	1 / -	mm	-
CTI, test solution A, 50 drops value	600 / -	-	IEC 60112
Assessment of the insulation group	I	-	DIN EN 60664-1
CTI, Performance Level Categories, PLC	0	class	ASTM D 3638
Dielectric strength, Short Time	35 / -	kV/mm	ASTM D 149
Volume resistivity	1E11 / -	Ohm*cm	ASTM D 257
Arc Resistance	5 / -	class	ASTM D 495

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	45 / *	cm ³ /10min	ISO 1133
Temperature	220 / *	°C	-
Load	5 / *	kg	-
Melt volume-flow rate, MVR	17 / *	cm ³ /10min	ISO 1133
Temperature	220 / *	°C	-
Load	2.16 / *	kg	-

VESTAMID®

Molding shrinkage, parallel	0.9 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / *	%	ISO 294-4, 2577
Mold temperature	80 / *	°C	-
Melt temperature	220 / *	°C	-

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	122 / *	cm ³ /g	ISO 307, 1157, 1628

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	220	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Characteristics

Applications

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

Processing

Wire/Cable extrusion

Special Characteristics

Halogen-free, Semi-crystalline, High heat resistant, Low viscosity

Features

Low coefficient of friction

Color

Orange

Additives

Flame retardant, Heat stabilizer

Chemical Resistance

General chemical resistance