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	**174000 / 119000**	psi	ISO 527
Tensile strength	**5370 / 4790**	psi	ISO 527
Yield stress	**5370 / 4790**	psi	ISO 527
Yield strain	**12 / 17**	%	ISO 527
Stress at 50% strain	**4210 / 3770**	psi	ISO 527
Stress at break	**5370 / 5510**	psi	ISO 527
Nominal strain at break, tB	**250 / 270**	%	ISO 527
Charpy impact strength, +23°C	**61.8 / N**	ftlb/in²	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy impact strength, -30°C	**32.8 / 58**	ftlb/in²	ISO 179/1eU
Type of failure	**C / C**	-	-
Charpy notched impact strength, +23°C	**1.43 / 3.33**	ftlb/in²	ISO 179/1eA
Type of failure	**C / C**	-	-
Charpy notched impact strength, -30°C	**1.43 / 0.951**	ftlb/in²	ISO 179/1eA
Type of failure	**C / C**	-	-
Flexural modulus, 23°C	**171000 / 122000**	psi	ISO 178
Flexural stress at conv. deflection, 23°C	**5080 / 3480**	psi	ISO 178

Flexural strength, 23°C	**6530 / 5080**	psi	ISO 178
Flexural strain at flexural strength, 23°C	**8 / 9**	%	ISO 178
Flexural stress at break, 23°C	**N / N**	psi	ISO 178
Flexural strain at break, 23°C	**N / N**	%	ISO 178

Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature	**349 / ***	°F	ISO 11357-1/-3
Glass transition temperature, DSC	**104 / ***	°F	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**131 / ***	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**266 / ***	°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	**277 / ***	°F	ISO 306
Melting Temperature	**349**	°F	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1.08 / -**	g/cm³	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	**1.08**	g/cm³	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	**0.0591 / ***	in	-
Burnin behav. at thickness h	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**0.0157 / ***	in	-
Burning behav. at thickness h	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**0.0315 / ***	in	-

Burnin behav. at thickness h	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**0.1181 / ***	in	-
Limiting Oxygen Index	**30**	%	ASTM D 2863
Glow Wire Flammability Index (GWFI)	**1760**	°F	IEC 60695-2-12
GWFI - thickness tested	**0.0157**	in	-
Glow Wire Flammability Index (GWFI)	**1760**	°F	IEC 60695-2-12
GWFI - thickness tested	**0.0295**	in	-
Glow Wire Flammability Index (GWFI)	**1760**	°F	IEC 60695-2-12
GWFI - thickness tested	**0.0591**	in	-
Glow Wire Flammability Index (GWFI)	**1760**	°F	IEC 60695-2-12
GWFI - thickness tested	**0.1181**	in	-
Glow Wire Ignition Temperature (GWIT)	**1650**	°F	IEC 60695-2-13
GWIT - thickness tested	**0.0315**	in	-
Glow Wire Ignition Temperature (GWIT)	**1650**	°F	IEC 60695-2-13
GWIT - thickness tested	**0.0157**	in	-
Glow Wire Ignition Temperature (GWIT)	**1380**	°F	IEC 60695-2-13
GWIT - thickness tested	**0.0591**	in	-
Glow Wire Ignition Temperature (GWIT)	**1380**	°F	IEC 60695-2-13
GWIT - thickness tested	**0.1181**	in	-
Hot Wire Ignition (HWI)	**0**	PLC	IEC 60695-2-20
HWI - thickness tested	**0.0157**	in	-
Hot Wire Ignition (HWI)	**0**	PLC	IEC 60695-2-20
HWI - thickness tested	**0.0295**	in	-
Hot Wire Ignition (HWI)	**0**	PLC	IEC 60695-2-20
HWI - thickness tested	**0.0591**	in	-
Hot Wire Ignition (HWI)	**0**	PLC	IEC 60695-2-20
HWI - thickness tested	**0.1181**	in	-

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/sq	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	**889 / 914**	kV/in	IEC 60243-1
Dielectric strength, AC, P25/P25	**899 / -**	V/mil	IEC 60243-1
Thickness tested	**0.0394 / -**	in	-
Dielectric strength, DC, S20/S20	**1190 / -**	kV/in	IEC 60243-1/2
Thickness tested	**0.0394 / -**	in	-
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	**890 / -**	V/mil	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	**428 / ***	°F	-
Load	**4.76 / ***	lb	-

Molding shrinkage, parallel	**0.9 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.0 / ***	%	ISO 294-4, 2577
Mold temperature	**176 / ***	°F	-
Melt temperature	**428 / ***	°F	-

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	**3380 / ***	in^3/lb	ISO 307, 1157, 1628

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	**428**	°F	ISO 294
Injection Molding, mold temperature	**176**	°F	ISO 294
Injection Molding, injection velocity	**7.87**	in/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