

Product Information

VESTAMID® X7167

HIGH VISCOSITY, SELF-EXTINGUISHING PA12 COMPOUND, FREE OF HALOGEN AND PHOSPHORUS

VESTAMID® X7167 NC is a heat stabilized PA12 compound containing a non-migrating flame retardant, free of halogen and phosphorous.

VESTAMID® X7167 NC complies with the requirements of FAR 25.853 or ABD 0031. The absence of halogens and phosphorous makes VESTAMID® X7167 NC especially suitable for interior parts in aircrafts, railways and ships.

This resin can be used for extrusion as well as for injection molding. Due to the presence of flame retardant melt temperature should not exceed 260 °C. We recommend melt temperatures of 210 - 230 °C.

VESTAMID® X7167 NC is supplied as cylindrical pellets, ready for use, 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, Aircraft and Aerospace, Industry and Engineering

Sustainability

Sustainable electricity

Processing

Injection molding, Extrusion

Delivery form

Pellets, Granules

Resistance to

Heat (thermal stability), Fire / burn

Additives

Lubricant, Flame retardant

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	1700 / 1440	MPa	ISO 527
Tensile strength	47 / 42	MPa	ISO 527
Yield stress	47 / 42	MPa	ISO 527
Yield strain	5 / 13	%	ISO 527
Stress at 50% strain	36 / 34	MPa	ISO 527
Stress at break	47 / 35	MPa	ISO 527
Nominal strain at break, tB	200 / >50	%	ISO 527
Charpy impact strength, +23°C	N / N	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N / N	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	7 / 9	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, -30°C	6 / 6	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Flexural modulus, 23°C	1760 / 1400	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	58 / 42	MPa	ISO 178
Flexural strength, 23°C	66 / 53	MPa	ISO 178
Flexural strain at flexural strength, 23°C	6 / 6	%	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	178 / *	°C	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	50 / *	°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	175 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	150 / *	°C	ISO 306
Melting Temperature	178	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1050 / -	kg/m ³	ISO 1183
Water absorption	1.5 / *	%	Sim. to ISO 62
Humidity absorption	0.6 / *	%	Sim. to ISO 62
Density	1050	kg/m ³	ASTM D 792

Burning Behav.	dry / cond	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	1.6 / *	mm	-
Burnin behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	3.2 / *	mm	-
Oxygen index	26 / *	%	ISO 4589-1/-2
Limiting Oxygen Index	26	%	ASTM D 2863
Thickness tested	1.5	mm	FAR 25.853
Burning behav. (aircraft int.), 12s Ignition Time	pass	-	FAR 25.853
Flame time	8	s	FAR 25.853
Flaming time of drippings	2	s	FAR 25.853
Burn length	10.0	mm	FAR 25.853

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	1E12 / 2E12	Ohm*m	IEC 62631-3-1
Surface resistivity, C, circular electrodes	- / >1E15	Ohm per square	IEC 62631-3-2
Relative permittivity, 50Hz	- / 5	-	IEC 62631-2-1
Relative permittivity, 100Hz	- / 4.8	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.6 / 3.2	-	IEC 62631-2-1
Dissipation factor, 50Hz	- / 990	E-4	IEC 62631-2-1
Dissipation factor, 100Hz	- / 800	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	380 / 400	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	34 / 36	kV/mm	IEC 60243-1
Dielectric strength, AC, S20/P50	28 / -	kV/mm	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	600 / -	-	IEC 60112
Assessment of the insulation group	I	-	DIN EN 60664-1

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	4.1 / *	cm ³ /10min	ISO 1133
Temperature	230 / *	°C	-
Load	2.16 / *	kg	-
Molding shrinkage, parallel	0.6 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / *	%	ISO 294-4, 2577
Mold temperature	80 / *	°C	-
Melt temperature	240 / *	°C	-

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	220 / *	cm ³ /g	ISO 307, 1157, 1628

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	240	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294

VESTAMID®

Injection Molding, injection velocity	200	mm/s	ISO 294
Injection Molding, pressure at hold	70	MPa	ISO 294

Characteristics

Applications

Electrical and Electronical, General purpose

Color

Natural color

Processing

Profile extrusion

Additives

Flame retardant, Heat stabilizer

Special Characteristics

Halogen-free, Phosphorus-free, High heat resistant, High viscosity, Self-extinguishing

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. mold temperature	30	°C	-
Max. mold temperature	100	°C	-
Min. melt temperature	220	°C	-
Max. melt temperature	260	°C	-