Product Information

VESTAMID® X7166

LOW VISCOSITY, SELF-EXTINGUISHING POLYAMIDE 12 COMPOUND, FREE OF HALOGEN AND PHOSPHORUS

VESTAMID® X7166 NC is a heat stabilized PA 12 compound containing a non-migrating flame retardant, free of halogen and phosphorus. Tested according to UL94, VESTAMID® X7166 complies with the flammability class V-2.

Due to the halogen- and phosphorus-free flame retardants, VESTAMID® X7166 is especially suitable for the electronic and cable industry. It can be used for injection molding as well as for wire extrusion coating.

VESTAMID® X7166 is supplied as cylindrical granules, ready for processing, in moisture-proof bags.

Due to the flame retardants, the melt temperature should not exceed 260°C. We recommend melt temperatures within a range of 210°C to 230°C.

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.

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM OR VISIT OUR PRODUCT AT WWW.VESTAMID.COM

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile Modulus	**1890 / -**	MPa	ISO 527
Tensile Strength	**47 / -**	MPa	ISO 527
Yield stress	**47 / -**	MPa	ISO 527
Yield strain	**5.8 / -**	%	ISO 527
Stress at break	**32 / -**	MPa	ISO 527
Nominal strain at break, εtB	**20 / -**	%	ISO 527
Charpy impact strength, +23°C	**57 / -**	kJ/m²	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy impact strength, -30°C	**80 / -**	kJ/m²	ISO 179/1eU
Type of failure	**C / -**	-	-

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Charpy notched impact strength, +23°C	**3 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**5 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**1770 / -**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**55 / -**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**7 / -**	%	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	**41 / ***	°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	**140 / ***	°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**
Water absorption	**1.3 / ***	%	Sim. to ISO 62
Humidity absorption	**0.6 / ***	%	Sim. to ISO 62
Density	**1070 / -**	kg/m³	ISO 1183
Density	**1070**	kg/m³	ASTM D 792

Burning Behav.	**dry / cond**	**Unit**	**Test Standard**
Burnin behav. at thickness h	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**3.2 / ***	mm	-
YellowCard available	yes **/ ***	-	-

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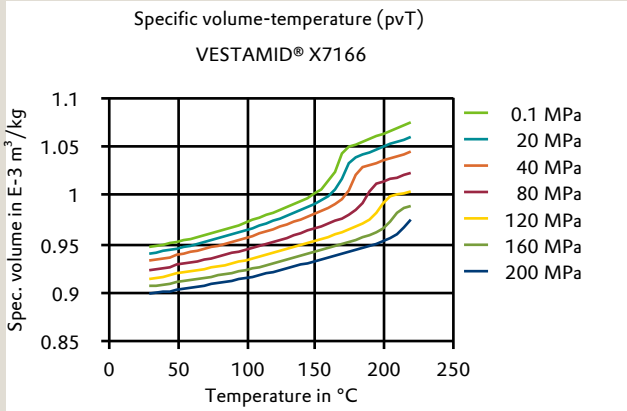
Burning behav. at thickness h	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**0.8 / ***	mm	-
Yellow Card available	yes / *	-	-
Burning behav. at 1.5 mm nom. thickn.	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**1.6 / ***	mm	-
Oxygen index	**34 / ***	%	ISO 4589-1/-2
Limiting Oxygen Index	**34**	%	ASTM D 2863

Electrical properties	**dry / cond**	**Unit**	**Test Standard**
Relative permittivity, 1MHz	**3.6 / -**	-	IEC 62631-2-1
Dissipation factor, 1MHz	**340 / -**	E-4	IEC 62631-2-1
Volume resistivity, ρV	**1E12 / -**	Ohm*m	IEC 62631-3-1
Electric strength, AC, S20/S20	**28 / -**	kV/mm	IEC 60243-1
CTI, test solution A, 50 drops value	**600 / -**	-	IEC 60112

Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**108 / ***	cm^3/10min	ISO 1133
Temperature	**250 / ***	°C	-
Load	**2.16 / ***	kg	-
Molding shrinkage, parallel	**0.7 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**0.8 / ***	%	ISO 294-4, 2577
Mold temperature	**80 / ***	°C	-
Melt temperature	**220 / ***	°C	-

Diagrams

Specific volume-temperature (pvT)



Characteristics

Key Feature, Industrial Sector
Aircraft and Aerospace, Electrical and Electronical, Instustry and Building Construction

Key Feature, Processing
Injection Molding, Extrusion

Key Feature, Resistance to
Heat (Thermal Stability), Fire / Burn

Key Feature, Additives
Flame retarding agent

Applications
IT and Telecommunication, Cable sheathing

Processing
Profile Extrusion

Special Characteristics
halogen-free, phosphorus-free, Semi-crystalline, Heat-stabilized, Low viscosity

Features
General Chemical Resistance, Low Coefficient of Friction

Color
Natural Color

Additives
Flame retarding agent, Heat stabilizer, Processing aids

Delivery form
Pellets, Granules

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
Density of melt	**860**	kg/m³	-
Thermal conductivity of melt	**0.2**	W/(m K)	-
Spec. heat capacity of melt	**3000**	J/(kg K)	-

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