

VESTAMID®

Product Information

VESTAMID® D18

MEDIUM-VISCOSITY PA612 RESIN

VESTAMID® D18 is a medium-viscosity Polyamide 612 compound for extrusion and injection moulding of e.g. monofilaments (toothbrush bristles).

The material based on PA612 absorbs only small amounts of water. Components made of this material therefore show excellent dimensional stability under changing ambient humidity.

VESTAMID® D18 is supplied as cylindrical granules in moisture-proof polyethylene containers ready for processing.

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

Sustainable, Industry and Engineering, Medical Devices, Sports and Lifestyle

Sustainability

Sustainable electricity

Processing

Injection molding, Extrusion

Delivery form

Pellets, Granules

Optics

Translucent

Conformity

Food contact

Additives

Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® D	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	9.9	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	7.2	kg CO ₂ eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	7.2	kg CO ₂ eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	0	Annual crop eq. y	ISO 14040, 14044
GWP savings as compared to 2023 reference	-0.8	kg CO ₂ eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	319000 / 247000	psi	ISO 527
Tensile strength	8270 / -	psi	ISO 527
Yield stress	8270 / 7540	psi	ISO 527
Yield strain	4 / 20	%	ISO 527
Stress at 50% strain	6090 / *	psi	ISO 527
Stress at break	7110 / *	psi	ISO 527
Nominal strain at break, tB	190 / >50	%	ISO 527
Charpy impact strength, +23°C	N / N	ftlb/in ²	ISO 179/1eU
Charpy impact strength, -30°C	N / N	ftlb/in ²	ISO 179/1eU
Charpy notched impact strength, +23°C	2.38 / 4.28	ftlb/in ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, -30°C	2.85 / 3.33	ftlb/in ²	ISO 179/1eA
Type of failure	C / C	-	-
Flexural modulus, 23°C	303000 / -	psi	ISO 178
Flexural stress at conv. deflection, 23°C	9720 / -	psi	ISO 178
Flexural strength, 23°C	11600 / -	psi	ISO 178
Flexural strain at flexural strength, 23°C	6.5 / -	%	ISO 178
Flexural stress at break, 23°C	N / -	psi	ISO 178

Flexural strain at break, 23°C	N / -	%	ISO 178
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Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	419 / *	°F	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	140 / *	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	284 / *	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	412 / *	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	356 / *	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	7.22E-5 / *	in/in/°F	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	6.67E-5 / *	in/in/°F	ISO 11359-1/-2
Melting Temperature	419	°F	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1.06 / -	g/cm ³	ISO 1183
Water absorption	2.7 / *	%	Sim. to ISO 62
Humidity absorption	1 / *	%	Sim. to ISO 62
Density	1.06	g/cm ³	ASTM D 792

Burning Behav.	dry / cond	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	0.0630 / *	in	-
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.1260 / *	in	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	>1E13 / -	Ohm*m	IEC 62631-3-1
Relative permittivity, 100Hz	3.8 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.4 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	260 / -	E-4	IEC 62631-2-1

Dissipation factor, 1MHz	310 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	711 / -	kV/in	IEC 60243-1
Dielectric strength, AC, S20/P50	711 / -	V/mil	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

Optical properties	dry	Unit	Test Standard
Color b	0.5	-	CIE

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	70 / *	cm ³ /10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Melt volume-flow rate, MVR	59 / *	cm ³ /10min	ISO 1133
Temperature	464 / *	°F	-
Load	11 / *	lb	-
Molding shrinkage, parallel	1.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.4 / *	%	ISO 294-4, 2577
Mold temperature	176 / *	°F	-
Melt temperature	482 / *	°F	-

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	4980 / *	in ³ /lb	ISO 307, 1157, 1628
Amino end group	<5	mmol/kg	Evonik standard
Carboxyl end group	95	mmol/kg	Evonik standard

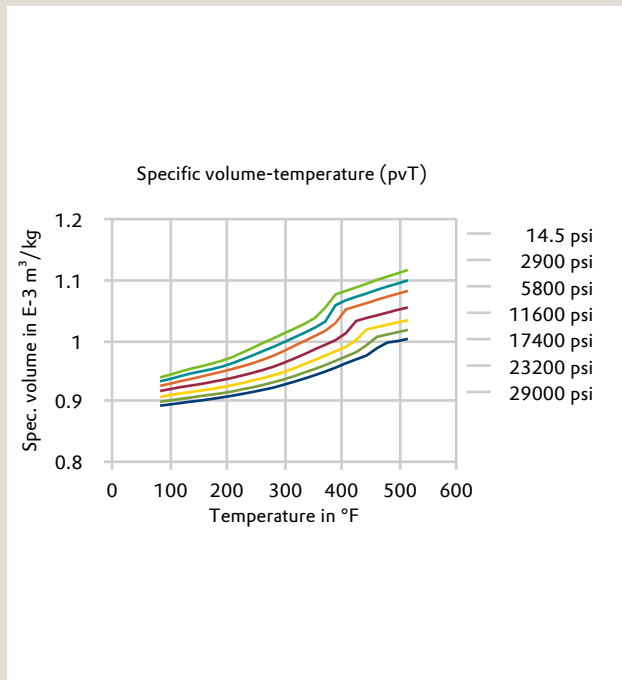
Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	482	°F	ISO 294
Injection Molding, mold temperature	176	°F	ISO 294

VESTAMID®

Injection Molding, injection velocity	7.87	in/s	ISO 294
Injection Molding, pressure at hold	10200	psi	ISO 294

Diagrams

Specific volume-temperature (pvT)



Characteristics

Processing

Profile extrusion

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	86	°F	-
Max. mold temperature	212	°F	-
Min. melt temperature	446	°F	-
Max. melt temperature	518	°F	-