

Product Information

VESTAMID® DX9300

LOW-VISCOSITY PA612 RESIN

VESTAMID® DX9300 is a low-viscosity and heat-stabilized Polyamide 612 compound for injection moulding of e.g. retainers for quick connectors.

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® DX9300 meets the requirements of the ISO 1874-PA612, MHR, 12-020.

VESTAMID® DX9300 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

Automotive and Mobility, Sustainable

Sustainability

Sustainable electricity

Processing

Injection molding

Delivery form

Pellets, Granules

Resistance to

Heat (thermal stability), Oil / fuels

Electrical

Insulating

Conformity

Automotive

Additives

Lubricant, Release agent, Unfilled

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® D Compound low	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	21.4	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	7.4	kg CO ₂ eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	7.4	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	-2.2	kg CO ₂ eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	305000 / 247000	psi	ISO 527
Tensile strength	8560 / -	psi	ISO 527
Yield stress	8560 / 7540	psi	ISO 527
Yield strain	5 / 20	%	ISO 527
Stress at 50% strain	6090 / *	psi	ISO 527
Stress at break	6090 / *	psi	ISO 527
Nominal strain at break, tB	>50 / >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	2.85 / 3.81	ftlb/in ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, -30°C	2.85 / 2.85	ftlb/in ²	ISO 179/1eA
Type of failure	C / C	-	-
Tensile-impact strength, notched, atN +23°C	56.6 / -	ftlb/in ²	ISO 8256/1

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	419 / *	°F	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	149 / *	°F	ISO 75-1/-2

Temp. of deflection under load B, 0.45 MPa	311 / *	°F	ISO 75-1/-2
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
Melting Temperature	419	°F	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1.06 / 1.06	g/cm ³	ISO 1183
Water absorption	2.6 / *	%	Sim. to ISO 62
Humidity absorption	1 / *	%	Sim. to ISO 62
Moisture content	0.05 / -	wt.-%	ISO 15512
Bulk density, Granulate	0.924	lb/ft ³	-
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	1E12 / -	Ohm*m	IEC 62631-3-1
Relative permittivity, 100Hz	4 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	2.9 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	440 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	330 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	737 / -	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

VESTAMID®

Optical properties

	dry	Unit	Test Standard
Color b	5.31	-	CIE

Rheological properties

	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	1.1 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.5 / *	%	ISO 294-4, 2577

Polymer analytics

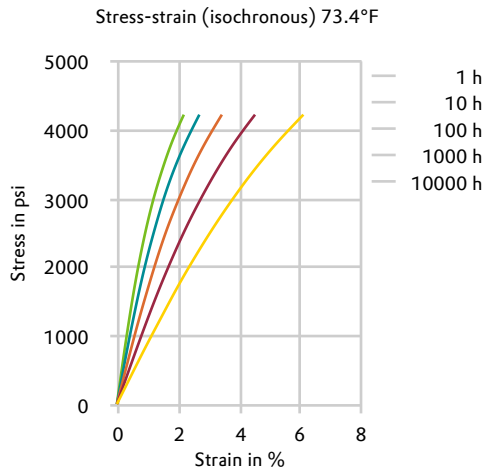
	dry / cond	Unit	Test Standard
Viscosity number	4260 / *	in ³ /lb	ISO 307, 1157, 1628

Test specimen production

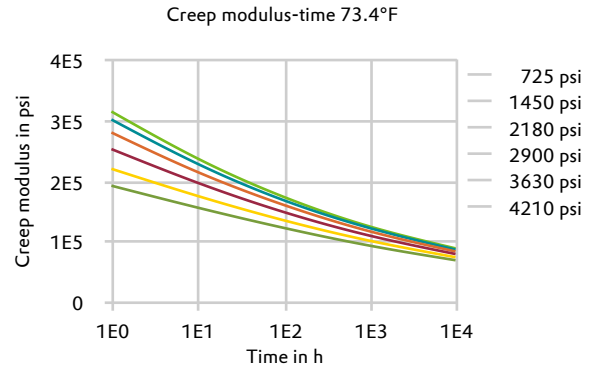
	dry	Unit	Test Standard
Injection Molding, melt temperature	482	°F	ISO 294
Injection Molding, mold temperature	176	°F	ISO 294
Injection Molding, injection velocity	7.87	in/s	ISO 294
Injection Molding, pressure at hold	10200	psi	ISO 294

Diagrams

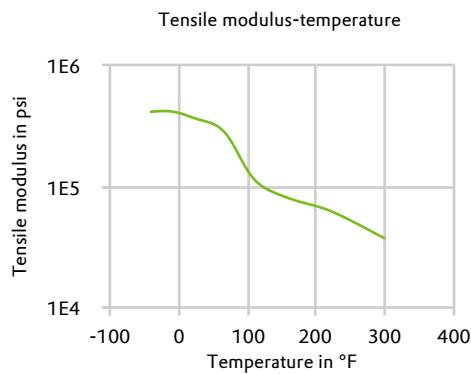
Stress-strain (isochronous) 73°F



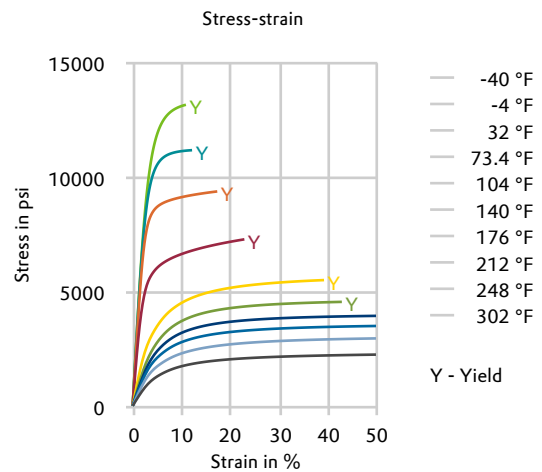
Creep modulus-time 73°F



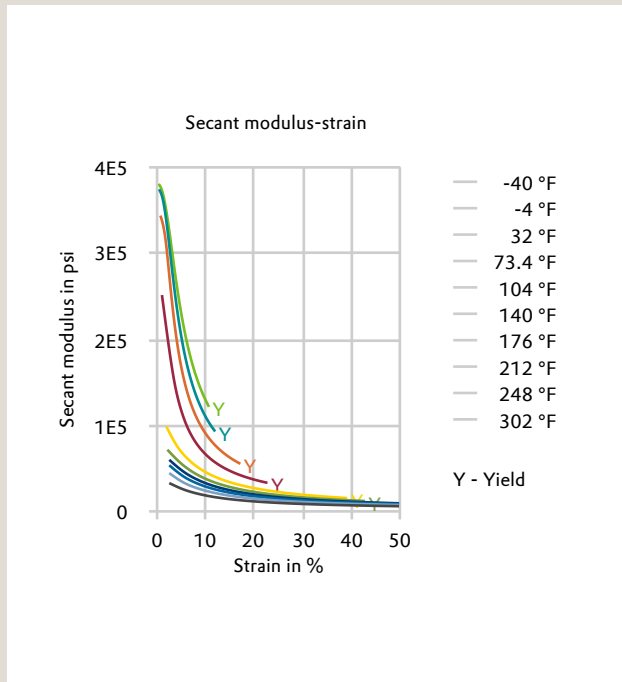
Tensile modulus-temperature



Stress-strain



Secant modulus-strain



Characteristics

Special Characteristics

High heat resistant

Color

Natural color

Additives

Release agent

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)

Mineral oils

- ✓ SAE 10W40 multigrade motor oil (23°C)
- ✓ Insulating Oil (23°C)

Standard Fuels

- ✓ ISO 1817 Liquid 1 (60°C)
- ✓ ISO 1817 Liquid 2 (60°C)
- ✓ ISO 1817 Liquid 3 (60°C)
- ✓ ISO 1817 Liquid 4 (60°C)
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (90°C)
- ✓ Diesel EN 590 (100°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)
- ✓ Zinc Chloride solution (50% by mass) (23°C)

Other

- ✓ Ethyl Acetate (23°C)
- ✓ Hydrogen peroxide (23°C)

✓ DOT No. 4 Brake fluid (120°C)

✓ Water (23°C)

Rheological calculation properties

	dry	Unit	Test Standard
Min. melt temperature	464	°F	-
Max. melt temperature	518	°F	-