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	**2100 / 1700**	MPa	ISO 527
Tensile strength	**59 / -**	MPa	ISO 527
Yield stress	**59 / 52**	MPa	ISO 527
Yield strain	**5 / 20**	%	ISO 527
Stress at 50% strain	**42 / ***	MPa	ISO 527
Stress at break	**42 / ***	MPa	ISO 527
Nominal strain at break, tB	**>50 / >50**	%	ISO 527
Charpy impact strength, +23°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N / N**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**6 / 8**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Charpy notched impact strength, -30°C	**6 / 6**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Tensile-impact strength, notched, atN +23°C	**119 / -**	kJ/m²	ISO 8256/1

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**215 / ***	°C	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	**65 / ***	°C	ISO 75-1/-2

Temp. of deflection under load B, 0.45 MPa	**155 / ***	°C	ISO 75-1/-2
Vicat softening temperature B, 50 N, 50 K/h	**180 / ***	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**130 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**215**	°C	ASTM D 3418

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1060 / 1060**	kg/m³	ISO 1183
Water absorption	**2.6 / ***	%	Sim. to ISO 62
Humidity absorption	**1 / ***	%	Sim. to ISO 62
Moisture content	**0.05 / -**	Gew.-%	ISO 15512
Bulk density, Granulate	**14.8**	kg/m³	-
Density	**1060**	kg/m³	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	**1.6 / ***	mm	-
Burnin behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested	**3.2 / ***	mm	-

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	**29 / -**	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

Optical properties	dry	Unit	Test Standard
Color b	**5.31**	-	CIE

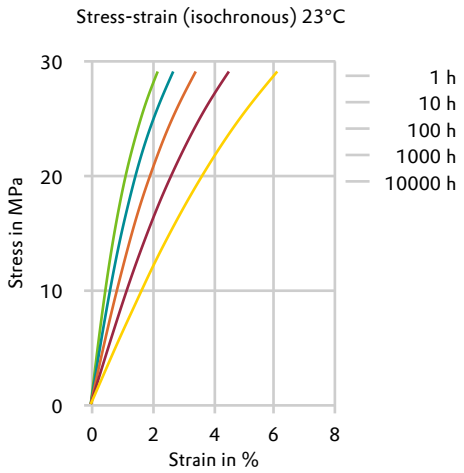
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	**1.1 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.5 / ***	%	ISO 294-4, 2577

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	**154 / ***	cm^3/g	ISO 307, 1157, 1628

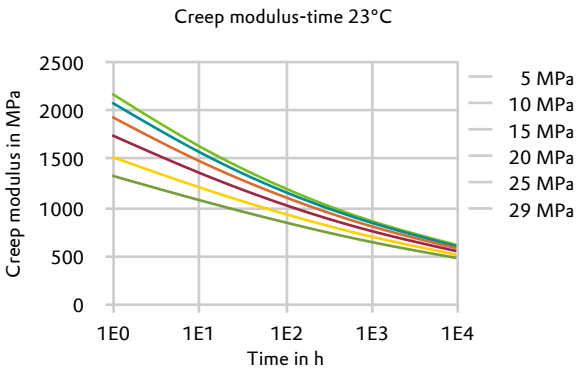
Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	**250**	°C	ISO 294
Injection Molding, mold temperature	**80**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/s	ISO 294
Injection Molding, pressure at hold	**70**	MPa	ISO 294

Diagrams

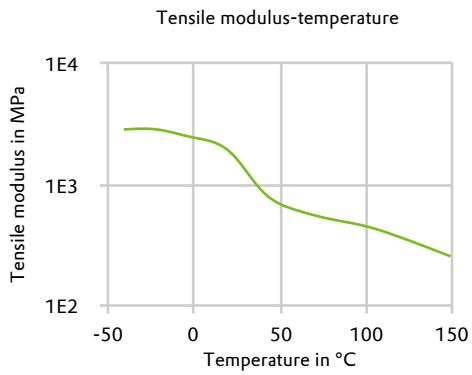
Stress-strain (isochronous) 23°C



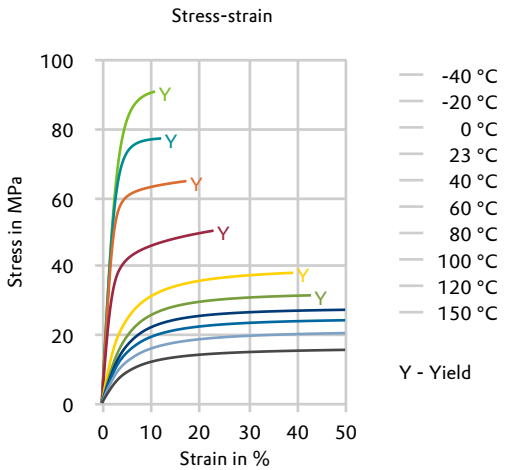
Creep modulus-time 23°C



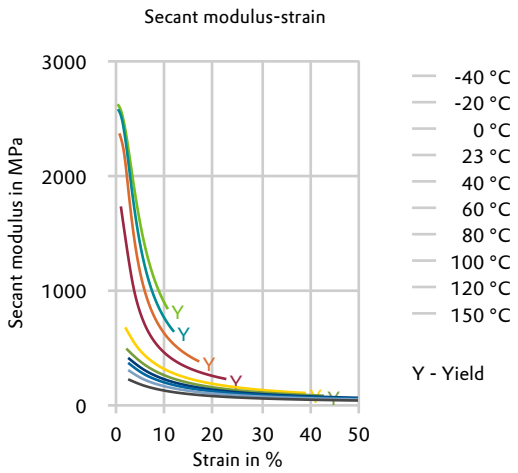
Tensile modulus-temperature



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	**240**	°C	-
Max. melt temperature	**270**	°C	-