

Product Information

VESTAMID® L2121 NC

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Resin: ISO 1874-PA12-P, EHL, 22-007

High viscosity, plasticized PA12 resin for extrusion of semi-rigid tubes.

Application examples: Pipes for the automotive industry

In the original and undamaged packaging, the product has a shelf life of at least 2 years if stored in dry rooms at temperatures not exceeding 30°C.

Key Features

Industrial Sector

Automotive and Mobility, Sustainable

Delivery form

Pellets, Granules

Sustainability

Sustainable electricity

Additives

Lubricant

Processing

Injection molding, Extrusion

LCA-values

LCA name of certificate

dry

[VESTAMID® L
Compound low](#)

Unit

-

Test Standard

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	700 / -	MPa	ISO 527
Yield stress	35 / -	MPa	ISO 527
Yield strain	20 / -	%	ISO 527
Stress at 50% strain	34 / -	MPa	ISO 527
Typical for the mat. nom. strain at br., tB	>50	%	ISO 527
Charpy impact strength, +23°C	N / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	40 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	7 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	176 / *	°C	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	45 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	110 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	170 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	130 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	160 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	170 / *	E-6/K	ISO 11359-1/-2
Melting Temperature	176	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1020 / -	kg/m ³	ISO 1183
Humidity absorption	0.6 / *	%	Sim. to ISO 62
Density	1020	kg/m 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	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	6.5 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.4 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	1900 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	550 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	34 / -	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
Molding shrinkage, parallel	0.6 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.6 / *	%	ISO 294-4, 2577

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	230	°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

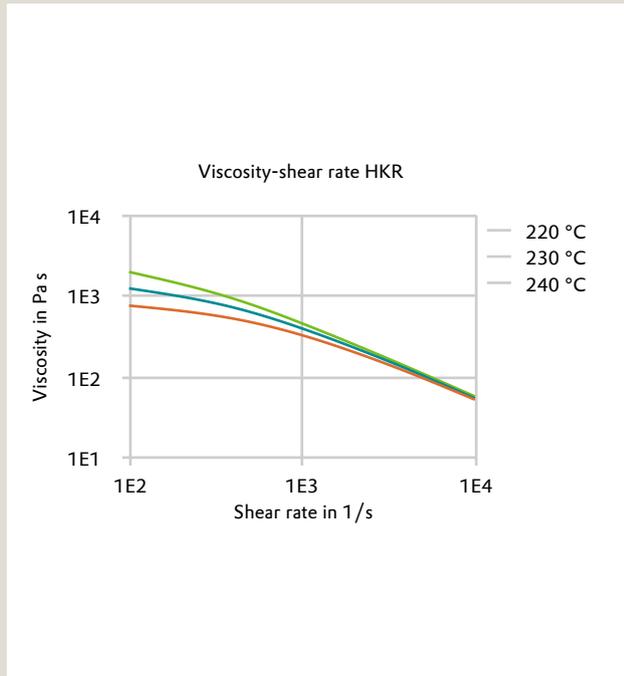
70

MPa

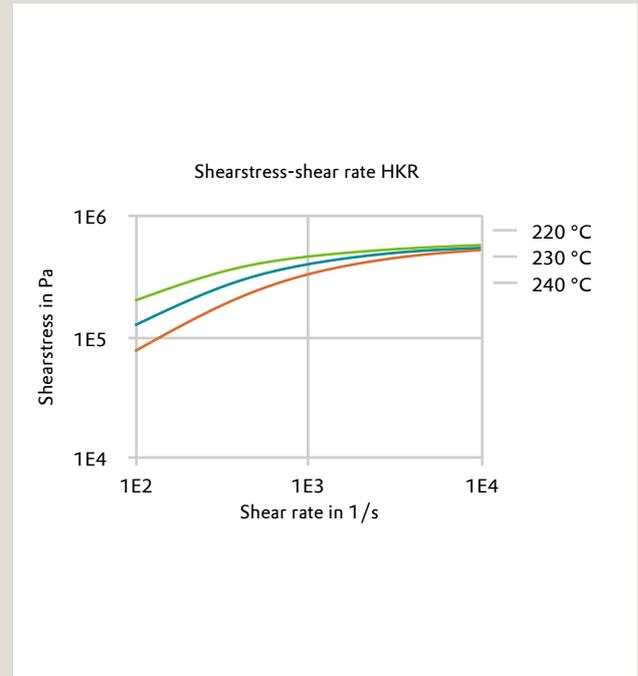
ISO 294

Diagrams

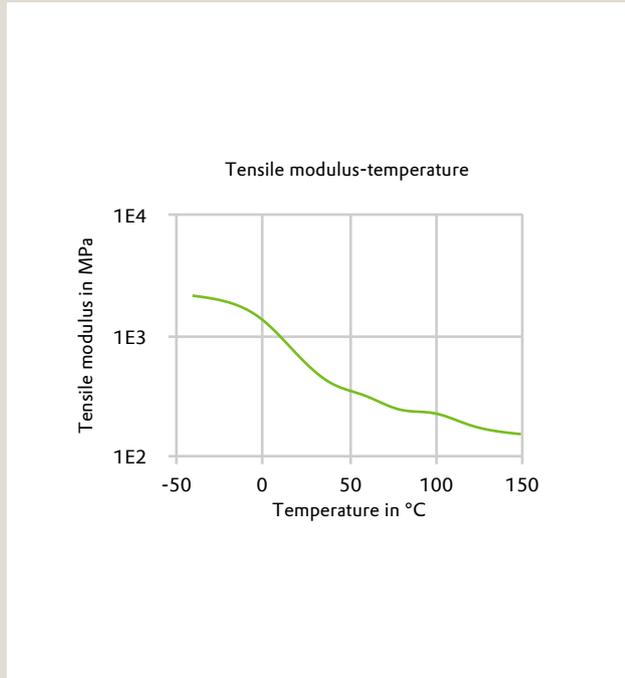
Viscosity-shear rate HKR



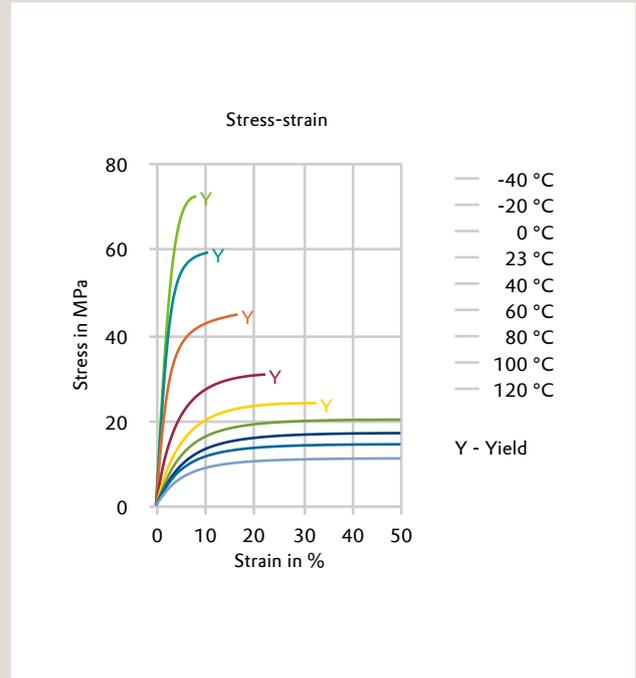
Shearstress-shear rate HKR



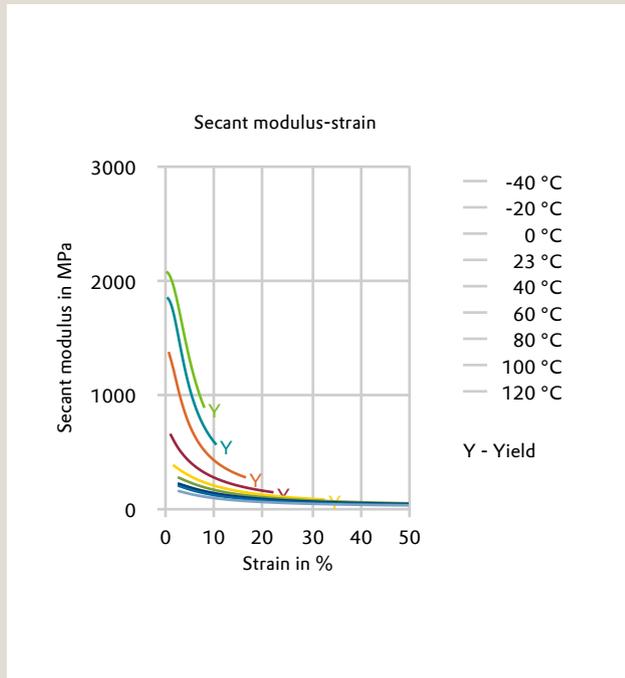
Tensile modulus-temperature



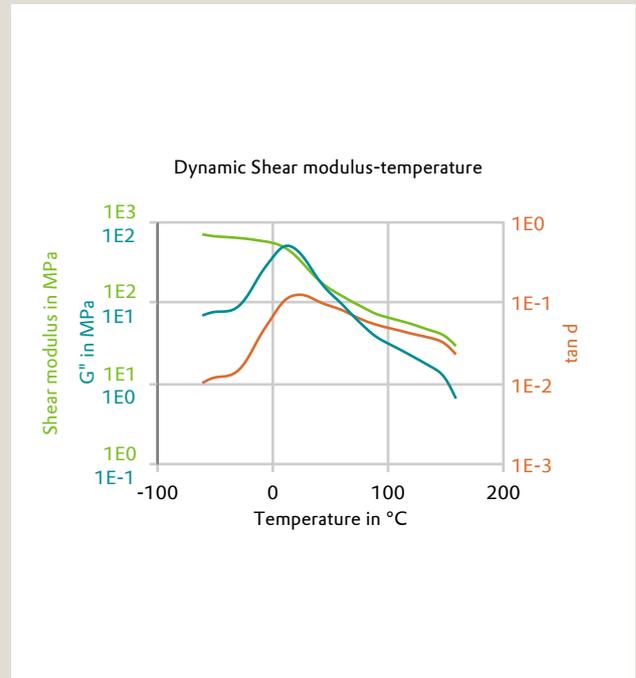
Stress-strain



Secant modulus-strain



Dynamic Shear modulus-temperature



Characteristics

Processing

Profile extrusion, Pipe/Tube extrusion

Additives

Plasticizer

Special Characteristics

Light-stabilized, U.V. stabilized, High heat resistant

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. mold temperature	30	°C	-
Max. mold temperature	100	°C	-
Min. melt temperature	210	°C	-
Max. melt temperature	250	°C	-