

Product Information

VESTAMID® X7099

ESPECIALLY DEVELOPED FOR THE PRODUCTION OF PLASTIC-RUBBER COMPOSITES ACCORDING TO THE EVONIK INDUSTRIES K+K PROCESS



VESTAMID® X7099 NC is a PA 612 resin especially developed for the production of plastic-rubber composites.

Parts made from VESTAMID® X7099 can be, without the use of adhesives or adhesion promoters, covulcanized with rubbers, such as XNBR, HNBR, AEM or FPM ("direct-bonding to rubber").

As a partially crystalline resin VESTAMID® X7099 exhibits an outstanding chemical resistance, especially against fuels, oils and fats. In comparison to resins based on PA 66 or PA 6 VESTAMID® X7099 has a distinctly lower water absorption.

VESTAMID® X7099 is supplied as cylindrical pellets ready for use in a moisture-proof packaging.

The use of colorants may affect property 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

Delivery form

Pellets, Granules

Sustainability

Sustainable electricity

Resistance to

Heat (thermal stability)

Processing

Injection molding

Additives

Glass fibers

LCA-values

LCA name of certificate

dry

[VESTAMID® D.GF](#)

Unit

-

Test Standard

ISO 14040, 14044

LCA certifier

[TÜV Rheinland](#)

-

ISO 14040, 14044

Blue water consumption	20.1	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	5.8	kg CO ₂ eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	5.8	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	-2.0	kg CO ₂ eq./kg	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	841000 / -	psi	ISO 527
Tensile strength	18100 / -	psi	ISO 527
Yield stress	18100 / -	psi	ISO 527
Yield strain	3.9 / -	%	ISO 527
Stress at break	17400 / -	psi	ISO 527
Nominal strain at break, tB	4.4 / -	%	ISO 527
Charpy impact strength, +23°C	38.1 / -	ftlb/in ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy impact strength, -30°C	28.5 / -	ftlb/in ²	ISO 179/1eU
Type of failure	C / -	-	-
Charpy notched impact strength, +23°C	4.76 / -	ftlb/in ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	3.33 / -	ftlb/in ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	754000 / -	psi	ISO 178
Flexural stress at conv. deflection, 23°C	23900 / -	psi	ISO 178
Flexural strength, 23°C	27800 / -	psi	ISO 178
Flexural strain at flexural strength, 23°C	5.5 / -	%	ISO 178
Flexural stress at break, 23°C	27400 / -	psi	ISO 178
Flexural strain at break, 23°C	5.8 / -	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	419 / *	°F	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	374 / *	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	410 / *	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	419 / *	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	401 / *	°F	ISO 306
Melting Temperature	419	°F	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1.2 / -	g/cm ³	ISO 1183
Water absorption	2 / *	%	Sim. to ISO 62
Humidity absorption	0.8 / *	%	Sim. to ISO 62
Density	1.2	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	4.4 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.9 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	650 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	430 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	965 / -	V/mil	Sim. to IEC 60243-1

Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.6 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / *	%	ISO 294-4, 2577
Mold temperature	176 / *	°F	-
Melt temperature	482 / *	°F	-

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	500	°F	ISO 294
Injection Molding, mold temperature	176	°F	ISO 294
Injection Molding, injection velocity	7.87	in/s	ISO 294

Characteristics

Processing

K&K process

Special Characteristics

Semi-crystalline, High heat resistant

Color

Natural color

Additives

Heat stabilizer

Chemical Resistance

Grease resistance, Oil resistance, Fuel resistance, General chemical resistance