Product Information

VESTAMID® Terra DS16

MEDIUM-VISCOSITY POLYAMIDE 1010



VESTAMID® Terra DS16 NC is a medium-viscosity PA 1010 basic polymer. VESTAMID® Terra DS16 is semi-crystalline, which is the reason for its high mechanical resistance and chemical stability. It absorbs only little water. As a result its mechanical properties vary little when exposed to changing environmental humidity, and the material features a high dimensional stability.

VESTAMID® Terra DS16 can be used to manufacture films with good transparency.

The high melting point of VESTAMID Terra DS16 compounds results in a high heat deflection temperature that can be advantageous for some applications.

VESTAMID® Terra DS16 occupies a position between the high-performance long-chain polyamides such as PA 12 and PA 1212 and the standard polyamides PA 6 and PA 66, which have a shorter chain length.

VESTAMID® Terra DS16 NC is supplied as cylindrical granules, ready for processing, in moisture-proof bags.

VESTAMID® Terra is a group of new polyamides, the monomers for which are based entirely or partly on renewable raw materials.

VESTAMID® Terra DS is the polycondensation product of 1,10-decamethylene diamine (D) and 1,10-dodecanedioic acid (sebacic acid-S). Because both monomers are extracted from castor oil, VESTAMID® Terra DS is based on natural, bio-based and renewable resources up to 100%.

The results shown have been generated from a low number of production lots. Therefore, they are preliminary and not yet the result of a statistical evaluation. Therefore they must not be used to establish specifications.

For information about processing of VESTAMID®, please follow the general commendations about "Processing of VESTAMID® compounds".

The values presented are typical or average values, they do not constitute a specification.

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM
OR VISIT OUR PRODUCT AT WWW.VESTAMID.TERRA.COM

Key Features

Industrial Sector
Automotive and Mobility, Optics, Sports and Lifestyle

Sustainability
Contains renewable resources

Processing
Injection molding, Extrusion

Optics
X-ray transparent, Opaque

Conformity
Biocompatibility, Contains renewable resources

Additives
Unfilled

Delivery form
Pellets, Granules

LCA-values	dry	Unit	Test Standard
LCA name of certificate	VESTAMID® TERRA DS	-	ISO 14040, 14044
LCA certifier	TÜV Rheinland	-	ISO 14040, 14044
Blue water consumption	**1763.4**	kg	ISO 14040, 14044
Global Warming Potential incl. bio. C incl. LUC	**5.4**	kg CO_2 eq./kg	ISO 14040, 14044
Global Warming Potential excl. bio. C incl. LUC	**7.9**	kg CO_2 eq./kg	ISO 14040, 14044
Land use (ReCiPe 2016)	**22.6**	Annual crop eq. y	ISO 14040, 14044

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**1700 / 1250**	MPa	ISO 527
Yield stress	**54 / 48**	MPa	ISO 527
Yield strain	**5 / 22**	%	ISO 527
Stress at 50% strain	*** / 38**	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	**7 / 7**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Charpy notched impact strength, -30°C	**7 / 5**	kJ/m²	ISO 179/1eA
Type of failure	**C / C**	-	-
Flexural modulus, 23°C	**1780 / 1230**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**58 / 36**	MPa	ISO 178
Flexural strength, 23°C	**72 / 50**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**7 / 9**	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**200 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**37 / ***	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**55 / ***	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**136 / ***	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**196 / ***	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**171 / ***	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**115 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**135 / ***	E-6/K	ISO 11359-1/-2
Melting Temperature	**200**	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	**1040 / -**	kg/m³	ISO 1183
Water absorption	**1.8 / ***	%	Sim. to ISO 62
Humidity absorption	**1.4 / ***	%	Sim. to ISO 62
Density	**1040**	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	**V-2 / ***	class	IEC 60695-11-10
Thickness tested	**3.2 / ***	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity, V	**>1E13 / 8.3E11**	Ohm*m	IEC 62631-3-1
Surface resistivity, C, circular electrodes	**>1E15 / >1E15**	Ohm per square	IEC 62631-3-2
Relative permittivity, 50Hz	**3.6 / -**	-	IEC 62631-2-1
Relative permittivity, 100Hz	**3.6 / -**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**3.1 / -**	-	IEC 62631-2-1

Dielectric strength, AC, S20/S20, t. 1 mm	**37 / -**	kV/mm	IEC 60243-1

Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**N / A / ***	cm^3/10min	ISO 1133
Molding shrinkage, parallel	**1.4 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.5 / ***	%	ISO 294-4, 2577

Polymer analytics	**dry / cond**	**Unit**	**Test Standard**
Viscosity number	**160 / ***	cm^3/g	ISO 307, 1157, 1628
biogenic carbon content	**100**	%	ASTM D 6866

Characteristics

Applications
(Sun-) glasses, Monofilament

Special Characteristics
Halogen-free, Phosphorus-free, PTFE-free, High heat resistant, Medium viscosity

Features
Non-corrosive, Dishwasher detergents resistant

Color
Natural color

Chemical Resistance
General chemical resistance

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