

## Product Information

### VESTAMID® *Terra* DS22 natural color

#### High viscosity polyamide 1010

VESTAMID *Terra* DS22 natural color is a high viscosity PA 1010 basic polymer. VESTAMID *Terra* DS22 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* DS22 can be used to manufacture films with good transparency.

The high melting point of VESTAMID *Terra* DS22 compounds results in a high heat deflection temperature that can be advantageous for some applications.

VESTAMID *Terra* DS22 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.

Because of its chemical and physical properties, and the plant origin of its monomers, VESTAMID *Terra* DS22 is an interesting addition to conventional longer-chain polyamides, and it also meets the growing demand for materials made from renewable raw materials.

VESTAMID *Terra* DS22 natural color 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-decanedioic acid (sebacic acid—S). Because both monomers are extracted from castor oil, VESTAMID® Terra DS is based on natural, renewable resources up to 100%.*

Property	Test method		Unit	VESTAMID Terra DS22	
	international	national			
Density	23°C	ISO 1183	DIN EN ISO 1183	g/cm <sup>3</sup>	1.05
Tensile test		ISO 527-1	DIN EN ISO 527-1		
Stress at yield		ISO 527-2	DIN EN ISO 527-2	MPa	54
Strain at yield				%	5
Strain at break				%	> 50
Tensile modulus		ISO 527-1	DIN EN ISO 527-1	MPa	1700
		ISO 527-2	DIN EN ISO 527-2		
CHARPY impact strength		ISO 179/1eU	DIN EN ISO 179/1eU		
	23°C			kJ/m <sup>2</sup>	N <sup>1)</sup>
	-30°C			kJ/m <sup>2</sup>	N <sup>1)</sup>
CHARPY notched impact strength		ISO 179/1eA	DIN EN ISO 179/1eA		
	23°C			kJ/m <sup>2</sup>	11 C <sup>1)</sup>
	-30°C			kJ/m <sup>2</sup>	14 C <sup>1)</sup>
Vicat softening temperature		ISO 306	DIN EN ISO 306		
Method A	10 N			°C	196
Method B	50 N			°C	171
Water absorption		ISO 62	DIN EN ISO 62		
	saturation			%	1.8
Viscosity number		ISO 307	DIN EN ISO 307	cm <sup>3</sup> /g	220
Melting range		ISO 11357			
DSC	2 <sup>nd</sup> heating			°C	200
Percentage of Renewable Carbon (calculation)		ASTM 6866		%	100
Global Warming Potential (GWP)*		Evonik, PE International		kg CO <sub>2</sub> equivalents/ kg material	2.8

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.

\*preliminary data

<sup>1)</sup> C = Complete break, incl. hinge break  
N = No break