

## VESTAMID® D for Filaments

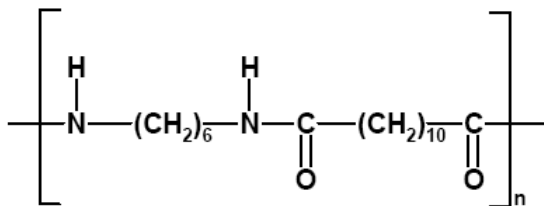
### Get the Most of Your Bristles!

Soft or hard, fine or strong—VESTAMID® D is the right material for manufacturing filaments. Polyamide 612 compounds by Evonik are easily processible into various bristle qualities, allow a variety of dimensional modifications, and are easy to color.

#### For a long-time functionality

Specific viscosity adjustments allow monofilaments of varying thicknesses to be produced efficiently. The balanced mechanical properties, low water absorption, and low abrasion of filaments made of VESTAMID® D make it perfect for toothbrush bristles as well as industrial applications such as abrasive filaments or high-tech filter fabrics. Their superior resilience compared to other monofilament materials ensures among others that the finished bristles do not lose their shape. As a result, the bristles remain fully functional for a long time.

PA 612 is the polycondensation product of 1,6-hexamethylene diamine and 1,12-dodecanedioic acid (1,10-decane dicarboxylic acid).



#### High wet rigidity

The carbonamide group (–CO–NH–) concentration of the polyamides affects their water absorption. Because the concentration of polyamide 612 is well below that of polyamide 6 or polyamide 66, for example, polyamide 612 absorbs only little moisture in comparison with them. If filaments are used in humid or wet environment this fact influences the stiffness positively: VESTAMID® D features a high wet rigidity.

## Important properties of VESTAMID® D

Property	Test-method	Unit	VESTAMID® D16	VESTAMID® D18	VESTAMID® D22	VESTAMID® D26
Viscosity number	ISO 307	cm <sup>3</sup> /g	160	180	220	260
Melting temperature	ISO 11357	°C	215	215	215	215
Water absorption, 23 °C saturation	ISO 62	%	2.7	2.7	2.7	2.7
VICAT softening temp Method B 50 N	ISO 306	°C	180	180	180	185
Tensile test	ISO 527					
Stress at yield		MPa	58	60	60	60
Strain at yield		%	5	4	4	4
Strain at break		%	> 100	> 100	> 100	> 100
Tensile modulus	ISO 527	MPa	2200	2200	2200	2200
CHARPY 23 °C impact strength	ISO 179/1eU	kJ/m <sup>2</sup>	N	N	N	N
CHARPY -40 °C impact strength	ISO 179/1eU	kJ/m <sup>2</sup>	N	N	N	N
CHARPY notched 23 °C impact strength	ISO 179/1eA	kJ/m <sup>2</sup>	5 C	6 C	7 C	8 C
CHARPY notched 40 °C impact strength	ISO 179/1eA	kJ/m <sup>2</sup>	6 C	6 C	7 C	7 C

N = no break

C = complete break

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