

# VESTAMID® HT*plus* M3000

## Base polymer

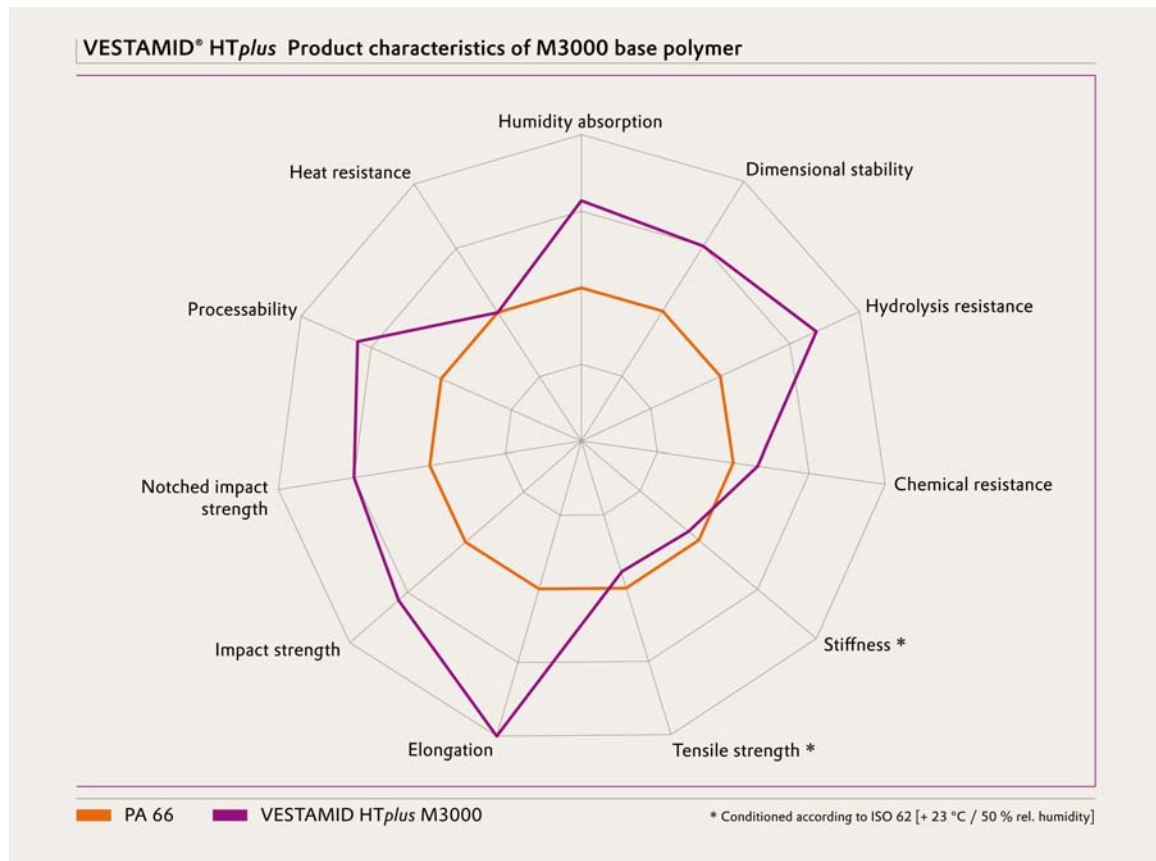
VESTAMID® HT*plus* M3000 is a polyphthalamide based on PA10T. It is a semicrystalline product with aromatic units and partly derived from natural resources. PA10T's melting point is 30°C lower than that of PA6T (VESTAMID® HT*plus* M1000).

The comparison of the product characteristics, as well as the main properties of both base polymers highlight the further improved performance profile of VESTAMID® HT*plus* M3000.

### Thermal properties of VESTAMID® HT*plus* M3000 compared to PA6T

Property	VESTAMID® HT <i>plus</i> M3000	PA66
Ts / Tm Melting point	285°C	260°C
Tg* Glass transition temperature	125°C	60°C

\*dry, the glass transition temperature decreases as humidity increases



## Application properties

- VESTAMID® HT*plus* is a semicrystalline product which is ranked as a high performance plastic due to its property profile.
- VESTAMID® HT*plus* M 3000 is a new bio-based PPA, a next generation polymer by Evonik. As its monomers largely consist of naturally sourced raw materials, it significantly reduces CO<sub>2</sub> emissions compared to pure petroleum-based polyamides.
- It extends the already very good properties of VESTAMID® HT*plus* M1000 by an improved chemical resistance and dimensional stability as well as an increased hydrolysis resistance whilst at the same time reducing its moisture absorption. Therefore VESTAMID® HT*plus* M3000 is particularly well-suited for all parts coming into contact with hot water or food.
- Its high long-term temperature resistance combined with its excellent chemical resistance enables the development of new applications, e.g., brake fluid or hot oil.
- This polymer's excellent mechanical properties (especially with reinforcements) and its very good dimensional stability make it a good substitute for metals such as Al, Zn, Mg, brass, and even thermosetting materials.
- With its very good creep resistance and high heat resistance this polymer can be used to produce components withstanding heavy loads at room temperature or above.
- Due to the high melting point VESTAMID® HT*plus* is suitable to manufacture electronic components even for soldering processes without lead.

## Important properties of VESTAMID® HT*plus* M3000 base polymer in comparison to PA66

Property	Test method	Unit	VESTAMID® HT <i>plus</i> M3000	PA 66
Density	ISO 1183	g/cm <sup>3</sup>	1.1	1.12
Water absorption	23°C ISO 62	%	3.0	8.5
saturation		%	0.15	2.8
moisture absorption in air				
Tensile test	ISO 527-1/2			
Tensile strength		MPa	73	73
Strain at break		%	5	40
Tensile modulus	ISO 527-1/2	MPa	2700	2400
CHARPY impact strength	23°C -40°C ISO 179/1eU	KJ/m <sup>2</sup>	60 C	N
			60 C	N
CHARPY notched impact strength	23°C -40°C ISO 179/1eA	KJ/m <sup>2</sup>	6.4 C	6 C
			5.5 C	4 C
Maximum short-term temp.			255	200
Temp. of deflection under load				
Method A			128	80
Method B			230	210
Vicat softening temperature	ISO 306			
Method A		°C	280	250
Method B		°C		

C = complete break

® = registered trademark

October 2011

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. Evonik disclaims all representations and warranties, whether express or implied, and shall have no liability for, merchantability of the product or its fitness for a particular purpose (even if Evonik is aware of such purpose), or otherwise. Evonik shall not be responsible for consequential, indirect or incidental damages (including loss of profits) of any kind. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.