

## VESTAMID® HT*plus* for electronic devices

### Faster. Thinner. Less.

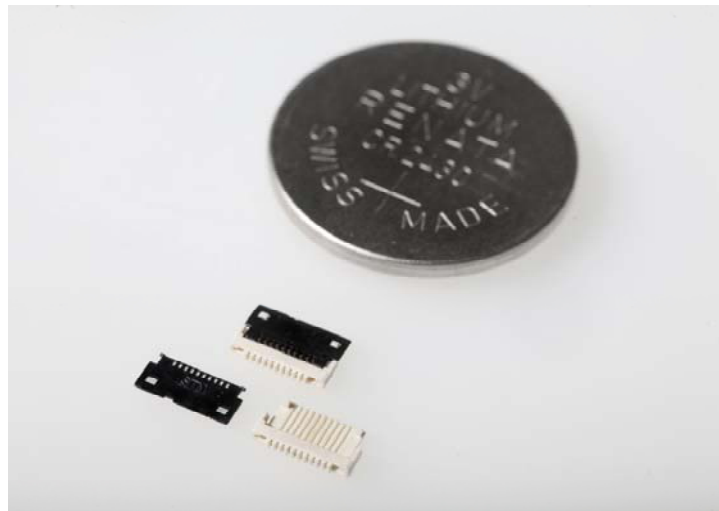
Components made of VESTAMID® HT*plus* enable faster production, allow thinner wall thickness and are less prone to wear and tear.

### An all-rounder

These days, everything relies on computers. And those computers rely on connectors. Connectors ensure efficient data flow and dependable power supply. They serve as input-output links, printed circuit board connectors or memory card bases. Or, for that matter, simply as power connections. But the trend towards ever smaller and more powerful computers also means more and more demands are being made on connectors. For one thing they need to be made extremely heat resistant. And they need to possess increasingly enhanced processing qualities. Connectors made of VESTAMID® HT*plus* easily measure up to such exacting demands.

### Best flame class

Electronic devices made of VESTAMID® HT*plus* are classified flame class V0, at a wall thickness of 0.4mm. Thus, these connectors even have no trouble withstanding lead-free solder baths of extremely high temperatures. As a consequence, such components are much easier to process and thus faster to manufacture. The production process is facilitated by the fact that the use of VESTAMID® HT*plus* reduces the incidence of corrosion on machines compared to the level normally occurring when other materials are used. Because it has a light color, VESTAMID® HT*plus* can be used to make not only black components, but ones in a whole array of individually colorings, as well.



### Reinforced or unreinforced

Evonik is the only manufacturer to offer two variations of PPA: fiber-glass-reinforced or unreinforced. Both variations are heat resistant and particularly suitable for use in the interior of aircrafts, trains or ships. VESTAMID® HT*plus* is also suitable for making LCD bases, transponder casings or SMDs (surface-mounted devices).

### Additional technical benefits

- Contains no halogens or red phosphor
- Complies with RoHS and WEEE regulations
- Passed JEDEC1 blistering test
- Material approval in accordance with UL 94
- Glass transition temperature >125°C
- Less water absorption and higher dimensional stability than PA66 and PA46

## VESTAMID® HT $plus$ -flame retardant polyphthalamide compounds

Property	Test method international	national	Unit	VESTAMID HT $plus$ M1900 (unreinforced)	VESTAMID HT $plus$ M1933 (glass-fiber reinforced)	
Density	23°C	ISO 1183	DIN EN ISO 1183	g/cm <sup>3</sup>	1.23	1.44
Tensile test		ISO 527-1	DIN EN ISO 527-1	MPa	75	105
Stress at break		ISO 527-2	DIN EN ISO 527-2	%	1.8	1.7
Strain at break						
Tensile modulus		ISO 527-1	DIN EN ISO 527-1	MPa	4200	11300
		ISO 527-2	DIN EN ISO 527-1			
CHARPY impact strength		ISO 179/1eU	DIN EN ISO 179/1eU			
	23°C				22 C <sup>1)</sup>	28 C <sup>1)</sup>
	-40°C				24 C <sup>1)</sup>	26 C <sup>1)</sup>
CHARPY notched impact strength		ISO 179/1eA	DIN EN ISO 179/1eA			
	23°C				3 C <sup>1)</sup>	4 C <sup>1)</sup>
	-40°C				3 C <sup>1)</sup>	3 C <sup>1)</sup>
Temperature of deflection under load		ISO 75-1				
Method A	1.8 MPa	ISO 75-2			138	267
Method B	0.45 MPa				256	301
Melting range		ISO 11357				
DSC	2nd heating				300-315	300-315
Flammability acc. UL94		IEC 60695	UL94			
	0.4 mm				V-0	V-0
	0.8 mm				V-0	V-0
Comparative tracking index		IEC 60112	IEC 60112			
Test solution A	CTI					<600
	100 drops value					575
Glow wire test		IEC 60695-2-12/13	DIN EN 60695-2-12/13			
GWIT 2mm				°C		800
GWFI 2mm				°C		960
Mold shrinkage		Determined on 2 mm sheets with film gate at rim				
	In flow direction	mold temperature 80°C ISO		%		0.2
	in transverse direction			%		0.9

® = registered trademark

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