



# Halogen free solutions for white goods connectors

Reducing the impact on the environment with a portfolio of HF materials

**White goods OEMs and Tier1s are looking for materials to produce high performance and safer connectors that are able to meet the most stringent specifications while being halogen free. The materials for connectors in unattended appliances need to meet the requirements as specified in IEC 60335-1.**

This standard describes the test procedures required for unattended household appliances such as washing machines, dryers and dishwashers, which operate under high currents ( $\geq 0,2A$ ). They include the GWFI 850°C (IEC 60695-2-12), the GWIT 775°C (IEC 60695-2-13) and the glow wire end product test of 750°C (IEC 60695-2-11 GWT). The GWT of 750°C has an extinguishing time of less than 2 seconds on assembled parts.

DSM Engineering Plastics is now able to offer a complete portfolio of Halogen Free Flame Retardant insulation materials plastics able to meet the highest safety standards, specifically for the production of RAST connectors in the white goods market.

## Halogen Free Flame Retardant insulation materials

Arnite® T XG510 PBT has received VDE Approval for electrical insulating materials. This new grade is particularly suited for components like connectors in white goods applications, such as washing machines, dryers and dishwashers. Arnite T XG510 is revolutionary because it is the first unfilled PBT which has tested positively according to GWFI & GWIT on end products. The lower density of halogen free PBT, compared with halogen

containing PBTs, saves material, cost and weight. This results in safe and high quality end products and contributes to a better environment. Moreover, PBT has a better dimensional stability compared to polyamides.

Stanyl® ForTii™ is an entirely new high performance polymer family. It offers a unique balance of properties including excellent dimensional stability, high stiffness and mechanical strength at elevated temperatures, high melting and glass transition point as well as excellent processability in terms of flow and processing window. Unique properties of Stanyl ForTii include its excellent reflow soldering ability, which is better than PPA, very high pin retention values which are better than LCPs, stable and fast processing, very good electrical properties (CTI 600V), low moisture uptake and proven lower corrosion on molding equipment compared with competitive products. The ForTii™ F11 grade has received VDE Approval for electrical insulating materials.

For more information, please turn page.

“Stocko Contact and DSM have been cooperating closely over the past years. As the first company to introduce SMT RAST solutions we can provide OEMs in the Whitegoods Industry with true value and competitive advantage by fulfilling their demanding requirements. In this way, Stocko benefits from new polymer developments and DSM can develop and optimize polymers aligned with their customers’ roadmaps.”

**Dipl.-ing Michael Degenhardt**  
Design Engineer Connectors  
Stocko Contact

The development of this portfolio demonstrates our strong commitment to our OEM and Tier1 customers in the white goods industry. At the same time, it also opens the path towards halogen free electronics outside the traditional ICT industry.

### **Eco+ solution**

These materials are all Halogen Free, reducing the use of hazardous materials and the impact on the environment.

## **DSM Engineering Plastics**

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