News Release

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LANXESS expands product range of halogen-free flame-retardant PBT compounds

High glow wire resistance protects at home and on the road

- **Good application opportunities for components used in unattended household appliances and in electrified vehicles**
- **Improved tracking resistance**

Cologne – Specialty chemicals company LANXESS is expanding its range of halogen-free flame-retardant compounds based on polybutylene terephthalate (PBT) to include variants with outstanding fire resistance in glow wire tests. The first in the product range is a compound reinforced with a glass fiber content of 25 percent. There are plans to introduce the trial product onto the market shortly. “Due to their high glow wire resistance, such PBT materials have great potential in components used in unattended household appliances. In addition, we see very good opportunities for electrical and electronic components of electrified vehicles, for example in the area of battery charging,” explains Alexander Radeck, application developer in the High Performance Materials (HPM) business unit at LANXESS.

Excellent glow wire resistance even on the finished part

The new PBT material has already been certified by VDE Prüf- und Zertifizierungsinstitut GmbH with a GWIT value of 775 °C for wall thicknesses of 0.4 to 3.0 millimeters (Glow Wire Ignition Temperature, IEC 60695-2-13). It also achieves excellent results in glow wire tests on finished parts according to IEC 60695-2-11. “We therefore assume that it will also perform well in even stricter glow wire tests on the finished part for unattended household appliances according to IEC 60335-1 and can be used, for example, in components for washing machines, dishwashers, and tumble dryers,” says Radeck. In such applications, the compound’s higher tracking

resistance compared to flame-retardant materials containing halogen also pays off.

Corrosion resistant and thermally stable

The other properties of the new glow wire-resistant material are similar to those of other halogen-free flame-retardant PBT compounds already on the market from LANXESS. These include product variants reinforced with a glass fiber content of 13 to 30 percent and an unreinforced compound. They all achieve the best classification of V-0 in flammability testing pursuant to the United States' UL 94 (Underwriter Laboratories Inc.) standard. They are also highly resistant to UV light and rarely corrode when in contact with live components. Another advantage is their high thermal stability. As such, their relative temperature indices pursuant to UL 746B measure at least 140 °C.

Alternative to polyamide 66 and PBT compounds with flame retardants containing halogen

Among these products, the unreinforced Pocan BFN2502 particularly stands out. Its properties make it a rarity on the market. Despite the halogen-free flame-retardant package, it has a high elongation at break of more than seven percent. It is particularly suitable for components that must be both dimensionally stable and permanently electrically insulating. "Some of our customers use the material to replace unreinforced polyamide 66 compounds with halogen-containing flame-retardant packages if the water absorption of polyamide in the component leads to problems with dimensional stability," explains Radeck. The new PBT is also an alternative for corresponding unreinforced PBT compounds because it provides a better tracking resistance of 600 volts (CTI A, Comparative Tracking Index, IEC 60112) for DC applications, for example.

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LANXESS is a leading specialty chemicals company with sales of EUR 9.7 billion in 2017 and about 19,200 employees in 25 countries. The company is currently represented at 74 production sites worldwide. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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You can find further information concerning LANXESS chemistry in our WebMagazine at http://webmagazine.lanxess.com.

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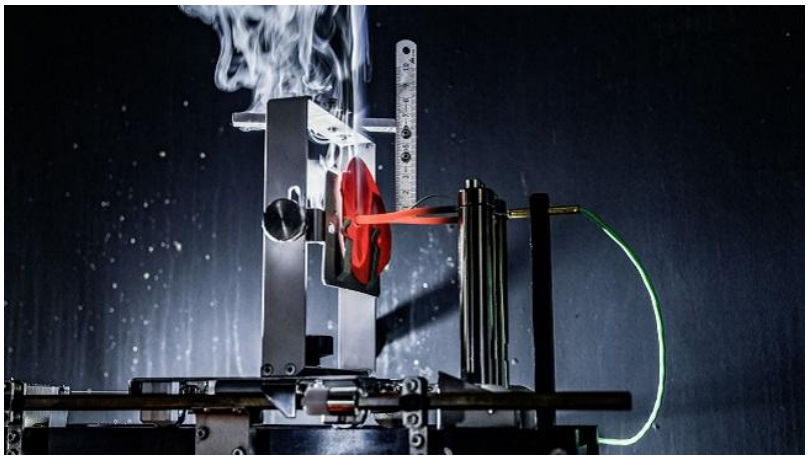
Image



For customers, LANXESS conducts flame retardancy tests in compliance with standards on test specimens and components – for example, glow wire tests. These services are part of the HiAnt service package, which supports customers along the entire development chain of a component.
Photo: LANXESS AG

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