

Safely filling up with electricity at home

- **Wallbox charging cable connector made of halogen-free flame-retardant polyamide 6 from LANXESS**
- **Highly flame-retardant**
- **Excellent tracking resistance**
- **Easy to process**

Cologne, August 30, 2022 – In addition to their use in battery and electric powertrain applications, technical plastics also have great application potential in the charging infrastructure for electric vehicles. This particularly applies to wall-mounted charging stations. These wallboxes must be very safe because they are used inside buildings such as parking garages or private garages. The selection criteria for the materials from which they are made are correspondingly strict. One plastic that meets the high requirements is the halogen-free flame-retardant Durethan BKV20FN01 from LANXESS. The polyamide 6 compound is used to make charging cable connectors manufactured by Leopold Kostal GmbH & Co. KG, a global system supplier of automotive, industrial and solar electrics as well as electrical contact systems. The charging cable connectors are used in Kostal's own Enector wallboxes, which are distributed via Kostal Solar Electric, as well as in wallboxes from a leading German producer of industrial connector systems and charging solutions for electromobility.

High glow-wire resistance

“The key arguments for using our material in this application were its high tracking resistance and high flame-retardance based on the halogen-free flame retardant package. It is also easy to process and produces components with a high surface quality,” explains Dr. Bernhard Helbich, Technical Marketing Manager Key Accounts at LANXESS. The compound's level of flame-retardance is demonstrated by the UL 94 flammability test of the US Underwriters Laboratories Inc. testing organization. The polyamide passes the test with the top classification of V-0 at a test specimen thickness of 0.75 millimeters. Because wallboxes come under “unattended household

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appliances”, the plastics used must comply with the international standard IEC/EN 60335-1. In particular, they must prove that they are flame-retardant in glow-wire testing. Durethan BKV20FN01 passes the GWIT test (Glow Wire Ignition Temperature, IEC 60695-2-13) at 775 °C with test specimen thicknesses of 0.75 millimeter and above. In the GWFI test (Glow Wire Flammability Index, IEC 60695-2-12), the thermoplastic achieves the top value for plastics of 960 °C (0.75 millimeter test specimen thickness).

Reduced risk of short circuits and equipment defects

Another strength of the material is its high tracking resistance. For example, it achieves the top rating of 600 in the CTI A test (Comparative Tracking Index, IEC 60112) and the top value of PLC 0 (Performance Level Category) in the similarly designed UL 746 test. “This reduces the risk of short circuits and defects caused by creepage currents in the wallbox. In addition, the electrical and electronic assemblies can be designed more compactly, resulting in a smaller device overall with higher power density,” Helbich explains.

The compound, which is reinforced with 18% short glass fibers by weight, also has good strength, stiffness and toughness. The charging cable connector systems are therefore not susceptible to mechanical loads, particularly during assembly. The polyamide can also be economically processed in a stable injection molding process.

More detailed information about LANXESS’ product portfolio for electromobility can be found at <https://lanxess.com/en/Products-and-Solutions/Focus-Topics/LANXESS-e-Mobility>.

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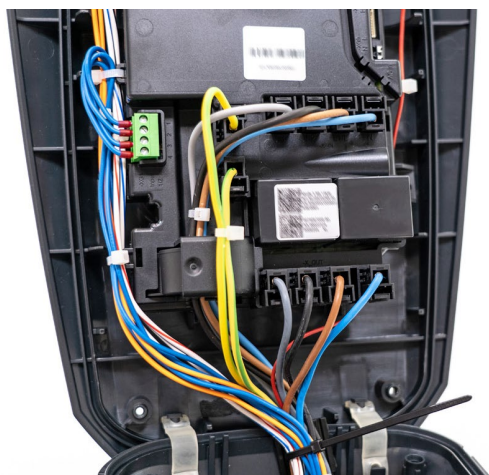
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Images



The charging cable connectors made of the halogen-free flame-retardant polyamide 6 Durethan BKV20FN01 are used in Kostal's own Enector wallboxes, which are distributed via KOSTAL Solar Electric.

Photo: LANXESS



The charging cable connectors are made of the halogen-free flame-retardant Durethan BKV20FN01. The polyamide 6 compound is particularly flame-retardant and has a high tracking resistance.

Photo: LANXESS

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News Release

LANXESS is a leading specialty chemicals company with sales of EUR 6.1 billion in 2021. The company currently has about 13,200 employees in 33 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives and consumer protection products. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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