Press Release

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Osram LED downlights keep cool with thermally conductive Stanyl TC polyamide 46 from DSM

Royal DSM, the global Life Sciences and Materials Sciences company, says new large LED downlights from market leader Osram will benefit from the numerous advantages of Stanyl® TC thermally conductive polyamide 46 in their heat sinks. Chosen ahead of aluminum, Stanyl TC scores with its ability to be easily and quickly injection moulded into complicated geometries that effectively remove heat from around the LED light source, thus ensuring a long lifetime.

Osram is one of the world's leading lighting companies. The L and XL versions of its LEDVANCE series are the first LED downlights (lights that are built into the ceilings of shops, offices, and domestic accommodation) from the company with a heat sink in plastic rather than in aluminum.

LEDs are quickly taking over from incandescent and even fluorescent lighting in buildings, thanks to their numerous significant benefits—very low energy consumption, potential lifetimes as much as 50 times longer than traditional bulbs, higher efficiency and reduced environmental impact.

A key challenge that lighting manufacturers need to overcome with LEDs is thermal management: the heat generated by the LED has to be dissipated in order to ensure that their potential to provide high quality light over many years is fully realized. Aluminum heat sinks are widely used to pull the heat away from the LED, but designers are increasingly calling for alternative materials that can provide them greater design freedom and lower weight, without compromising on safety.

DSM's Stanyl TC was developed specifically to answer this call. It has sufficient thermal conductivity (up to 14 W/mK) to successfully dissipate the heat generated by the LED; it also has the excellent flow properties common to all polyamides that enable it to be moulded into complicated shapes with high surface-to-volume ratios that enhance heat dispersion.

Stanyl TC is characterized by high mechanical properties (strength, stiffness, impact resistance) that are retained under cyclic thermal loads experienced in use. By selecting Stanyl TC, Osram was able to reduce the weight of the housing by around 50 % compared to aluminum. This facilitates the installation of the luminaire and enables the use of spring fixations in the ceiling. The material complies with flammability requirements according to IEC and UL safety standards.

The high thermal conductivity of Stanyl TC also translates into short production cycle times, and once demolded, no after-treatment is needed, unlike solutions in aluminum. This results in lower system cost and high volume production.

In addition to these advantages, production of heat sinks in Stanyl TC also helps to significantly reduce the carbon footprint associated with the production of LED lamps. Heat sinks made from Stanyl TC involve emissions of carbon dioxide that are 85% lower than in production of cast aluminum heat sinks.

More information can be found at www.dsm.com/electronics and www.stanyl.com.

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Or find us on:

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