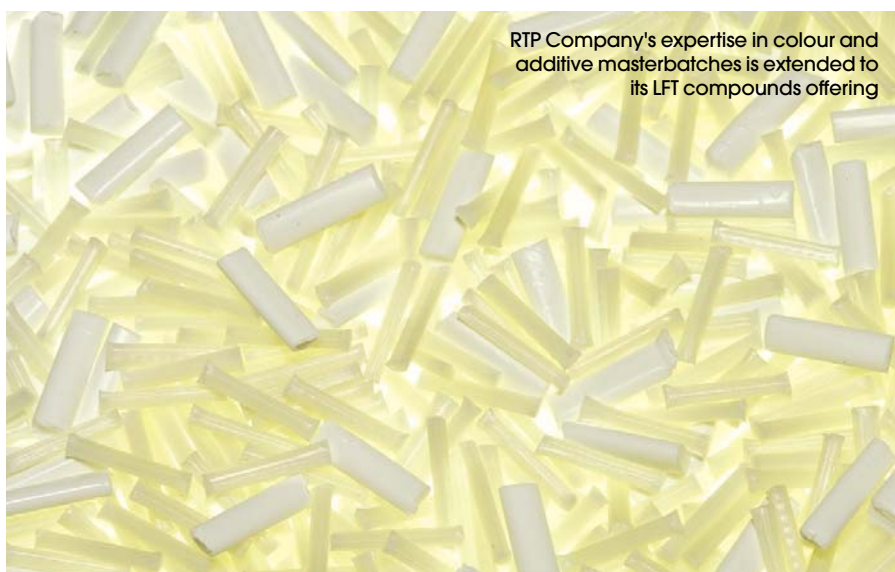


Deft advances

Performance capability improvements brought forth by recent compounding developments aim to profoundly impact a wide range of applications



RTP Company's expertise in colour and additive masterbatches is extended to its LFT compounds offering

New developments in engineered long fibre thermoplastic (LFT) compounds are taking shape at RTP Company (www.rtpcompany.com) — the compounder sees the commercialisation of VLF (very long fibre) PEEK in radomes for military weapon systems as a development that push its LFT portfolio to the top of the polymer pyramid.

Radomes made with VLF PEEK are said to be an improvement over short glass reinforced PEEK and led to the eventual replacement of the incumbent thermoset composite system. The increased performance of RTP 2299 X 108578C (50% long glass fibre reinforced PEEK) is expected to create new opportunities for fastener, oil field, and compressor related applications.

Eric Lee, RTP Company business manager for structural products, explains: "The improvement in toughness with high stiffness at elevated temperatures is a hallmark benefit of articles moulded with VLF composite pellets. Extending these advantages with VLF PEEK is very satisfying to our product development team and will enable new applications to be realised."

In addition to performance benefits, injection moulding VLF PEEK achieved cost savings by reducing the cycle time by several minutes. VLF PEEK parts exit the mould in

finished form ready for assembly unlike thermosets, aluminum, and titanium, all with high finishing costs.

RTP's expertise in colour and additive masterbatches has also extended to its LFT compounds with the introduction of long cut additives — the long-cut masterbatches are available as cube blends. Separation during handling is minimised because of similar pellet geometry that allows customers to receive superior, economic LFTs.

To overcome traditional limitations when it comes to delivering LFT products containing additives, RTP Company now provides customers more choices including additives in long-cut masterbatch pellets for dry blending or additives in pre-compounded LFT pellets. "By applying our compounding competencies to long-cut additives for LFTs, we are able to create robust LFT solutions and minimise lead times for our customers," Lee adds.

PolyOne (www.polyone.com) has launched its new OnCap compounds that feature permanent antistatic characteristics.

Fully compatible with polyolefins, the new compounds are ideally suited for use in co-extrusion applications and its antistatic properties shall provide both aesthetic improvements (in terms of reduced dust contamination) and security benefits (reduced risk of static-induced electrical discharge).

The new antistatic compounds can be used directly at the machine with any need for mixing and the homogeneity of the antistatic agent in the compound is an added plus. PolyOne offers customised compounds specific to customer needs and application. The OnCap compound is suitable for use in a range of applications including multilayer film, sheet extrusion, stretch film and wire and cable.

Conductive benefits

Injection mouldable conductive compounds are seeing an added boost in new application developments. At K2007, compounder A Schulman (www.aschulman.com) demonstrated its Schulatec TinCo products, jointly developed with the IKV plastics processing institute, Siemens and HEK, that consists of 15% thermoplastic combined with 55% copper fibre and 30% of a low melting alloy from HEK.

The Schulatec TinCo line is claimed to have electrical conductivity similar to steel. According to A Schulman's innovation manager Thilo Stier, this opens up potential to use the material in mechatronic applications such as moulded interconnection devices (3D-MID). This type of application was displayed on a 60-tonne three-component Arburg Allrounder 370S injection moulding machine producing a light unit with three LEDs.

The concept was initiated by German moulder Oechsler and involved the integration of a conductive strip in a Schulatec TinCo polyamide with a clear transparent ABS housing and transparent polyamide lens.



A Schulman's Schulatec TinCo conductive plastic was moulded by Arburg at K2007 in an Oechsler demonstration LED light unit using a three-component moulding process