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for use in the production of water pipes from polypropylene random copolymers (PP-R). The relevant brochure reveals that the products offer improved cost efficiency, enhanced processability, product consistency, high temperature resistance and minimal organoleptic effects, particularly important for the domestic potable water supply. According to Songwon, which describes itself as a specialist in the stabilization of PP-R pipes, long-term thermal stabilization (LTTS) of these products is typically provided by single or blended phenolic antioxidants. PP-R has been the material of choice in the production of pipes for the supply of hot and cold water for more than 20 years. Its advantages include light weight, fast and reliable weld jointing, and corrosion resistance, making it an ideal choice for heating, plumbing and domestic water pipes, the company says.

Songxtend 1105 is a new blend based on a phenolic antioxidant and a high-performance phosphite that addresses the requirements of resin producers in stabilizing chromium-type high-density-polyethylene (Cr-HDPE) blow-moulding resins. These resins are used in many applications requiring superior stiffness and stress-crack resistance, including packaging for personal care and pharmaceutical products, household cleaners and detergents. However, some resin producers experience colour-change problems with these materials. The new stabilizer offers colour improvement and ensures ‘excellent hydrolytic stability’ compared to some other high-performance phosphites used alone or in blends, the company asserts. Songwon also introduced Songxtend 2721 to improve the LTTS of recycled polypropylene compounds for automotive applications. The new stabilizer is specifically designed to meet the stringent European automotive OEMs’ LTTS requirements for interior or under-the-hood applications such as engine room covers, cable ducts and battery housing, the company reports.

More information: www.songwon.com

MATERIALS

Clariant extends oxygen scavengers range; agrees sale of masterbatches business

A new oxygen-scavenging additive masterbatch has been added to Clariant’s Mevopur range of medical-grade materials for pharmaceutical packaging and medical devices. According to the company, Mevopur ProTect provides effective protection against oxygen (O₂) degradation for drugs and nutraceuticals stored in polyethylene terephthalate (PET) bottles, even in a transparent monolayer construction, thereby ensuring the requisite shelf-life for such products. The new masterbatch concentrate was introduced at the Paris Pharmapack Europe event in February.

The active ingredient in Mevopur ProTect was originally developed to overcome the deficiencies of existing oxygen barrier systems used in PET packaging for food and beverages and shows ‘very high performance’ in scavenging oxygen permeating through container walls, Clariant reports [ADPO, December 2019, pp. 3-4]. It is able to maintain ‘extremely low levels’ of O₂ over extended periods even in a monolayer construction and refrigerated storage, the company asserts.

As with food and beverage packaging, PET is becoming more widely used for pharmaceutical packaging as it offers several advantages, including transparency, compared to high density polyethylene (HDPE), the long-time material of choice for such applications. ‘While food and beverages require a relatively short shelf-life, pharmaceuticals often need to maintain their potency even when stored for a year or more’, explains Steve Duckworth, global head of marketing & business development for Clariant Healthcare Polymer Solutions. The Mevopur ProTect additives help to combine transparency with long-term shelf-life, making it possible to meet the >2 years’ shelf-life required in pharmaceutical packaging, even with low concentrations of the active ingredient compared to alternative products, the company reports. In addition, tests have shown that PET pre-forms incorporating Mevopur ProTect do not need special storage conditions, maintaining activity after 3 months, it says. The ability of the new oxygen-scavenging product to provide effective protection in a monolayer PET container will also be beneficial in recycling; although this is not yet a major topic in pharma, PET is a highly recyclable material and ‘any oxygen barrier that does not require multiple layers is going to be an advantage’, Duckworth comments.

The protection offered by the Mevopur ProTect system depends on several factors, including packaging design, additive loading and target oxygen levels over time,
Clariant notes. It reports that in-house testing of 500 ml monolayer PET bottles found that those with a 3.6% loading of the new oxygen-scavenging concentrate were able to maintain oxygen levels below 1 ppm for more than 590 days, compared to just 22 days for untreated PET and 63 days for a competitive oxygen scavenger. ‘Based on these test results, we believe that [Mevopur ProTect] is one of the most powerful oxygen-scavenging systems available for pharmaceutical packaging’, Duckworth says. The new product may also provide an O2 protection solution in areas beyond pharmaceutical packaging. ‘In diagnostic applications, oxygen can interfere with the sample/reagent combination, affecting the accuracy of the analytics’, Duckworth comments. Clariant therefore expects some interest in Mevopur ProTect in these PET applications as well, he says.

This year marks the 10th anniversary of the launch of Clariant’s Mevopur product range [ibid., December 2010, pp. 3–5]. All Mevopur compounds and concentrates are produced in three dedicated facilities certified according to EN:ISO13485-2016 and use ingredients that have been pre-tested to ensure compliance with applicable standards for both medical devices and pharmaceutical packaging throughout the product life cycle. For pharmaceutical packaging applications, the Mevopur range offers one of the most comprehensive regulatory support services available, including testing ingredients in accordance to USP 661.1, EP3.1., ICHQ3D (USP<232>), and biocompatibility per USP<87>, <88>, the company claims. The new Mevopur ProTect product is offered with the same regulatory test documentation, it reports.

In other concentrates-related news, Clariant has reached agreement to divest its entire colour and additive masterbatches business to US company PolyOne for approximately US$1.56 billion. The segment operates 46 manufacturing operations and technology centres in 29 countries with about 3600 employees and had sales of CHF1.81 billion (c. $1.2 billion) in 2018.

The deal comprises two separate transactions. The global Masterbatches business is being sold for c. $1.50 billion, which represents about 12.1 times the reported EBITDA for the 12 months to 30 September 2019 on a cash and debt-free basis, while the sale of the masterbatches business in India has been agreed independently with Clariant Chemicals (India) Ltd and is valued at about $60 million (INR4.26 billion), representing c. 17.3 times the operation’s reported EBITDA over the same 12-month period. Clariant Chemicals (India) is listed on the stock exchanges in India with Clariant AG holding a 51% controlling stake. The deals were agreed before the onset of the ongoing coronavirus pandemic and, at the time of signing, both transactions were expected to close by 3Q 2020, subject to customary closing conditions and regulatory approvals.

Clariant’s executive chairman Hariolf Kottmann described the announcement as ‘a significant milestone’ on the company’s path to focusing ‘on businesses with above-market growth, higher profitability and stronger cash generation’. Clariant is also pursuing the sale of its Pigments business and plans to use the proceeds from the intended divestments of both non-core businesses to invest in innovations and technological applications within its remaining three core Business Areas (Care Chemicals, Catalysis and Natural Resources), to strengthen its balance sheet and to return capital to shareholders.

More information: www.clariant.com/mevopur and www.clariant.com

Silvergate unveils NIR-detectable black masterbatch to enhance sustainability

British company Silvergate has joined the growing number of masterbatch manufacturers offering carbon-free black and dark-coloured products in order to boost the recycling rates for black plastic packaging and, in so doing, contribute towards a more-circular economy.

Conventional black and dark plastics contain carbon-based pigments, which absorb rather than reflect infrared light. This prevents near infrared (NIR) sensors, which are widely used at recycling centres to automatically identify and sort plastic waste, from reading the characteristic, reflected NIR fingerprint of the plastic matrix. As a result, much of the UK’s black plastic packaging cannot be sorted for recycling and instead ends up in landfill, Silvergate reports.

To address this issue, the company is now manufacturing a line of affordable, NIR-detectable, carbon-free black and dark-coloured masterbatches within its range of sustainable masterbatches, providing brands and manufacturers with ‘greener’ options and contributing towards a more-circular economy, it says. According to Silvergate,