Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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While mono-material flexible PE and PP packaging films are advantageous with regard to their ease of mechanical recycling, some applications require multi-material packaging in order to achieve the necessary functionality – for example, to provide the appropriate gas barrier level to protect certain packaged foods. Recycling such mixed-material packaging films presents challenges as disturbance of the polyolefin recycling stream with non-polyolefin components must be avoided in order to ensure the quality level that allows upcycling into new packaging, Ampacet explains. For these materials, closed-loop processes that allow reclaimed waste or scrap film to be upgraded and reused in new, quality film applications offer a sustainable solution and provide an alternate end-of-life to landfill disposal.

An example of such a process is the in-house recycling of polyolefin–ethylene vinyl alcohol (EVOH)-based barrier film industrial scraps back into the original film structure. Targeting the specific situation where the preservation of optical and mechanical properties is required, Ampacet has recently introduced compatibilizer masterbatch ReVive 962 E. The new grade improves the homogeneity and transparency of the reprocessed polyolefin–EVOH blends, the company claims. In addition, the mechanical properties of films made with these blends are similar to the main base polymer, Ampacet adds. ReVive 962 E therefore allows higher usage of reclaimed film material and helps to reduce the consumption of virgin material in this application, the company reports. The new product, as well as BIAX4CE, is part of Ampacet’s R3 Sustainable Solutions portfolio [ADPO, January 2020, pp. 5–6].

A further recent addition to the R3 portfolio is REC-NIR-Black High Alcohol, an extension to the company’s award-winning line of NIR-transparent black masterbatches that allow sorting with NIR optical sensors and thus facilitate the recycling of black and dark-coloured plastics [ibid., November 2018, pp. 1–2]. According to Ampacet, the new black masterbatch is suitable for monolayer polyethylene terephthalate (PET) bottles and containers used for high alcohol products. Applications include hand sanitizers – currently in such high demand due to the COVID-19 pandemic – household cleaners, personal care products, over-the-counter pharmaceuticals, and wine and spirits. ‘Our REC-NIR-Black masterbatch line significantly reduces the carbon footprint by providing a second life for black plastic packaging’, comments Doreen Becker, the company’s sustainability director. The NIR-detectable technology helps to prevent black packaging waste from being diverted to landfill or energy recovery, instead allowing recyclers to obtain value from this waste and support the circular economy.

Underlining its commitment to furthering the recycling and reuse of plastics, Ampacet recently joined The Alliance to End Plastic Waste, a global not-for-profit organization with a vision to end plastic waste in the environment. A total of 47 member companies have committed more than US$1 billion to the cause. The alliance aims to develop, deploy and bring to scale solutions that will minimize and manage plastic waste. Doreen Becker will work with the Alliance on promoting recycling and reuse of plastics in the manufacturing cycle, Ampacet reports.

Alliance members use their technical, materials, logistics and engineering expertise to collaborate on ways to stop the flow of plastic waste. They also promote solutions for used plastics, including reuse, recovery and recycling. In addition, members promote infrastructure development, education and engagement, innovation and clean-up efforts.

More information: www.ampacet.com

Techmer PM’s charge enhancer improves filtration efficiency of face masks

US firm Techmer PM recently developed a charge-enhancing additive masterbatch that has proved effective in augmenting the efficacy of polypropylene (PP)-based nonwoven fabrics used in the production of face masks to reduce the transmission of the COVID-19 infection. The company reports that its Charge Enhancer additive helps these fabrics to meet and retain the filtration performance requirements laid down by the ASTM F2100 standard for medical face masks. Demand for such face masks is soaring during the current pandemic.

As the meltblown nonwoven PP filter material comes off the production line in roll form it is subjected to an electrical charge via an air plasma treatment. Known coincidentally as ‘corona’ charging, this process improves the filtration ability of the fabric, Techmer PM explains. Supplied in pellet form for addition to the PP at a typical loading...
of 4–5%, the company’s Charge Enhancer additive helps the meltblown material to enhance and retain the imparted charge, it reports. ‘Without the Charge Enhancer, the mask media would struggle to retain a filtration efficiency of ≥95’, claims Techmer PM’s VP of technology Bhushan Deshpande. Alongside the use of charge-enhancing technology, variables such as the structure of the fabric and the process conditions are also important in determining the efficacy of meltblown nonwovens used in mask media.

Existing manufacturers of high-quality face masks have ramped up production in response to the booming demand induced by the coronavirus pandemic, while additional companies have been motivated to re-tool to use their meltblown capacity to manufacture these products, Techmer PM observes. Academic and industry laboratories that normally devote their nonwovens equipment to pilot projects or trials have also modified their processes to manufacture commercial mask media, according to the company.

To complement its existing Charge Enhancer additive, Techmer PM reveals that it is testing new technology designed to provide more-permanent charge-enhancing effects than currently available; the technology will be ‘well suited’ for the development of reusable masks, according to Deshpande. The Clinton, TN-based company also offers a number of other solutions for the medical nonwovens sector in addition to its charge-enhancing masterbatch, including irradiation stabilizers, hydrophobics, softeners and Techsurf® hydrophilics.

Silvergate has developed its recycled content range to support plastic packaging producers who will be directly affected by the UK government’s pending plastic packaging tax, which will come into effect in April 2022; according to an update published in March this year following a consultation period, the new tax will apply to plastic packaging manufactured in, or imported into, the UK that contains less than 30% recycled plastics.

Commenting on the technical criteria behind the creation of the new range, Silvergate’s technical manager Mark Loughlin reveals that the company set out ‘a strict objective’ in order to ensure that it developed the best possible solution. ‘We wanted to develop a prime performance solution so neither the properties of the masterbatch nor moulding polymer would be affected by the use of recycled raw materials’, he says. The company therefore identified high-quality recyclates and developed ‘a robust formulation’ to make certain that the performance of the new masterbatch range matches that of virgin materials, he reports.

The reason for Silvergate developing a white masterbatch with virgin-like performance as the initial product in the 30% recycled content range was to ensure that the company could fulfil requests for commodity and batch orders, Loughlin explains. Silvergate was then able to expand quickly into other colours because ‘customers have taken such an interest’ in the new range, he adds. The company says it is able to incorporate recyclates successfully into the formulation of any colour the customer requests as it is not limited to ‘specific colour collections’.

Silvergate has also recently launched a Natural Colour Collection featuring ‘muted tones and heritage hues’, which are reportedly ‘on trend’ with interior designers and online influencers at present. The colour palettes are designed to ‘complement cool greys and classic whites’ to give producers of homewares and other consumer products ‘a convenient way to select colours’, according to the company’s sales executive and consumer goods specialist Emma Cank, who has been working closely with colour match technicians to develop the range. ‘The idea of this collection is to offer a convenient way for processors to get new products to market quickly and easily’, she says. Although it is a standard colour collection, it can be adapted as desired to suit individual needs, for example with a range of natural effects such as those that mimic the texture and appearance of paper and wood, or with glitter effects, Silvergate says. Specific shades can also be developed based on colours in the range. Earlier this year, the company also introduced a Spring colour collection comprising pastel and fresh hues.