

Upcycling is the new theme for additives producers



IMAGE: VÖLPKER

*Improving the quality and performance of recycled plastics is key to their acceptance in demanding applications. Additives producers believe their products can help. **David Eldridge***

This is an excerpt from the original article, prepared by VOELPKER®.
Source: www.plasticrecyclingworld.com (July/August 2020).



The global magazine for the plastics recycling supply chain. Published bi-monthly, it covers developments in: recycling plant; compounding; size reduction; separation and sorting; melt filtration; additives; and key end-use markets.

Inside our new edition:

- Additives
- AMI Report
- WEEE/ELV
- Washing

plus:

- Industry news

Main image:
Wax-based additives for polymer compounds from Völpker Spezialprodukte, one of the producers now targeting recycle

Right: Plastix is upcycling fishing net waste into durable products, supported by Techmer PM

Milliken's DeltaMax Performance Modifiers are formulated to raise melt flow while optimising impact properties, which can benefit the quality of recycled PP as well as virgin materials. DeltaMax elevates impact and melt flow to levels associated with virgin resins, says the company. "This unique capability allows compounders and converters to incorporate up to 100% recycled PP without sacrificing performance or processing."

At K2019, Milliken introduced the newest product in its DeltaMax family, DeltaMax 5000a, which will expand usage of the product into food packaging, driving benefits for caps, closures and thin-wall packaging following regulatory approvals.

Compound and additive producer **Techmer PM** has partnered with Denmark-based recycler Plastix to help it upcycle obsolete and discarded fishing nets, trawls and ropes. Plastix uses a combination of custom-made processing technologies and supplier equipment to mechanically recycle plastic fibres and rigid plastics primarily from the maritime industry. It produces compounded pellets in its OceanIX range of high-quality recycled HDPE and PP materials.

Thechmer says its Techperse additive helps its customers use up to 100% recycled materials, as with OceanIX, while maintaining physical properties and achieving their colour and appearance targets. Techperse is a colour and dispersion additive which breaks up pigment agglomerates to help avoid fibre breaks. It also contributes to better yield rates and longer die life.

Völpker Spezialprodukte bases its plastics additives on montan waxes and it develops grades to deliver specific solutions for producers of virgin and recycled plastic compounds. The company's Cevo range of additives have been developed to solve processing and application-related issues. It highlights Cevo-process B-3680 and Cevo-process B-3690, which are dispersion additives for the recycling of PCR HDPE/LDPE.



IMAGE: PLASTIX

Völpker says: "Post-consumer HDPE/LDPE waste in most cases contains unwanted polymer particles and mineral (or other) contaminations that prove to be disruptive in the production of recyclates and that reduce the quality. Their proper dispersion as well as the dispersion of fillers (for example, carbon black) is mandatory in order to produce adequate recycling qualities, for example for injection moulding."

In an example of virgin HDPE containing 2% carbon black, the company says the carbon black is "excellently dispersed" when Cevo-process B-3680 or Cevo-process B-3690 is added at 0.5% loading. Comparison of microscope images of manufactured foils - with and without use of the Cevo additive - shows that the number of carbon black agglomerates can be significantly reduced. The image on the right (below) shows the carbon black particles are isolated, demonstrating the dispersing effect within the olefinic matrix. "This result was confirmed by further key figures," says the company.

Völpker conducted a similar trial using recycled HDPE containing 2% carbon black, which again showed "excellent" dispersion by using the same Cevo additives. "This was proven by a classical filter pressure test: the results show that the increase in pressure is significantly reduced. This proves the dispersing effect of these additives in the post-consumer compound," says the company.

Right: Comparison of microscope images of carbon black particles in HDPE foil; right image shows result of using Völpker's Cevo dispersion additives

Source: Völpker

