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international edition

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Michael Trapp explains why through-coloured compounds can be superior in niche applications and why it is irrelevant whether he uses secondary raw materials to do so

“Quality instead of quota”

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Quality instead of quota for recycled plastics

Why through-coloured compounds can be superior in premium applications



“We guarantee the colour and technical specification of our compounds,” is how Michael Trapp sums up the special expertise of his company, which produces through-coloured technical thermoplastic compounds for high-quality niche applications. Above all, manufacturers of visible parts for house and building technology such as switch programmes, lights, door intercoms, heat meters, but also manufacturers of high-quality writing utensils as well as medical devices have been relying on the high granulate quality of Sattler KunststoffWerk GmbH in Mühlheim am Main for years. In an interview with K-PROFI, Managing Director Michael Trapp explains why it is completely irrelevant that secondary raw materials are used, how his company guarantees colour accuracy and why he tends to advise against masterbatch for these specific applications.

Text: Dipl.-Ing. (FH) Karin Regel, Editor K-PROFI

A customer-specific order that leaves the Sattler KunststoffWerk ranges from a granulate bag of 25 kg to a truck load of around 23 t. “We always produce on an order-by-order basis. If we have a master agreement with a customer, then we also store a defined quantity of compound,” says Michael Trapp, explaining the approach of his company, which employs around 30 people. To produce its annual 2,500 t, the production hall is equipped with six co-rotating, 32 D long twin-screw extruders with vacuum degassing from Noris Plastic GmbH & Co. KG, Altdorf, Feddem GmbH & Co. KG, Sinzig, and Leistriz Extrusionstechnik GmbH, Nuremberg. All lines are equipped with strand pelletising units from ips GmbH & Co. KG from Großostheim.

“Our lines run around the clock and, of course, have to be changed over frequently to meet a wide range and different customer requirements.” Good production preparation, which is adjusted almost daily to customer requests and raw material availability, is a must. “The worst colour change is from dark green to white translucent. It takes longer than one shift to really remove all material and colour residues in the system

components and be able to produce a colour-precise product again,” Michael Trapp reports from everyday production. But such changeovers are rare. Most of the time, one line is used for the same colour family and is run in a colour-similar way, with one line being used for the darker and one for the lighter formulations.

Secondary raw materials, of course

The base materials for the special compounds, to which not only the colours but also additives such as antioxidants, demoulding aids, UV protection or flame retardants, germicidal additives, laser-sensitive pigments, and impact modifiers are added, are technical thermoplastics. “We process all engineering thermoplastics except PVC from our focus materials PC and PC/ABS to PMMA, PA as well as POM and PET,” Michael Trapp continues, noting, “It all started with ABS in 1965.” His predecessor and company founder Edmund Kurt Sattler initially started in Offenbach am Main. In 1982, the company moved to its current location in Mühlheim am Main. He, too, was already producing custom-dyed compounds and

Left: Managing Director Michael Trapp: “Politics must not prescribe an alternative solution for the use of raw materials, we need openness for the technical solution.”

Below: Sattler works exclusively with colourants in powder form, which are weighed in strictly according to the recipe for each batch individually.



working with twin-screw extrusion lines. It was also he who used secondary raw materials to produce his granulates even back then. And so it has remained to this day. “We use every suitable input material we can get. This includes true-to-type and non-true-to-type goods from raw material producers as well as regranulates and regrinds, which we regularly buy from selected processors. The only thing that counts is the end product that we can produce from it. We make no compromises here, and our long-standing customers know that.”

Being open to technical solutions

When asked how high the recycle percentage is in his compounds, Michael Trapp answers very clearly: “We are not concerned with quotas, but with quality. The customer doesn't have to be concerned with the



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recycled content of the colour compounds he buys from us, as long as we meet his technical specifications." After all, Sattler has been processing secondary raw materials not just since there have been political demands for increased use of recyclates, but always. Obviously, it is in his interest to act economically and sustainably: "For us, the customer's material is always in the foreground. To this end, we process exactly the input material that is suitable, irrespective of political demands."

With regard to the current discussion in the market and the political regulations, his assessment is also very clear: "If politics prescribes a technical solution without an alternative, this must lead to a dead end. Companies need openness for the technical solution." There are already sufficient requirements: since 2002, there has been a landfill ban for plastics in the Technical Instructions on Municipal Solid Waste (TA Siedlungsabfälle), the take-back requirement for distributors of products in the Closed Substance Cycle Waste Management Act (Kreislaufwirtschaftsgesetz, KrWG) and the export ban for waste that is difficult to recycle, mixed or contaminated. "If these three requirements are implemented consistently, we no longer need to discuss quotas. The material use of recycled plastics would then be a question of economic efficiency. It would be the norm – like in our case, because incineration would then be more expensive."

Through-coloured compounds are advantageous

For Sattler, openness to the technical solution means that in the production of compounds that must be transparent or diffusely translucent, secondary raw materials are usually ruled out because of the varying inherent colour. Secondary raw materials are common for muted colours. "And when we use secondary raw materials, we usually use them at 100%," Michael Trapp reveals. For his customers,

he says, this is not relevant; what matters to them is the quality and the precise colour. And if a reproducible colour shade is important and rather small quantities are processed, Michael Trapp clearly advises his customers against the use of masterbatch. "For the use of colour concentrates, a manufacturer does give dosage recommendations, but each processor will find out the 'right' dosage for itself and its product and deviate from the recommendations if necessary."

In contrast, he says, processing compounds that have already been dyed through is very simple and safe. "In addition, an injection moulding machine does not have as good a mixing effect as a twin-screw extruder, so there could be inaccuracies when processing particularly small quantities of masterbatch," he names a second reason why he offers his customers through-coloured compounds. And his success proves him right: "Sometimes it takes a while before a customer decides in favour of our through-coloured compounds instead of masterbatch, but once he has made up his mind, he sticks with it. The

Sattler relies exclusively on strand pelletising systems, because they can be used flexibly and are and can be cleaned quickly.





At the site in Mühlheim am Main, there are a total of six twin-screw extrusion lines for the production of through-coloured compounds for high-quality niche applications.



In contrast to masterbatch, through-coloured compounds have the great advantage that they meet the customer's colour specifications reproducibly and precisely.

benefits are simply compelling, as evidenced by the number of regular customers we have had for many years."

Guaranteeing colour

Colour is an important feature of many components. "Although we are a relatively small company, we work with two colourists who develop each recipe in-house and coordinate it with the customer," Michael Trapp explains the procedure. For colouring, Sattler only uses colourants in powder form, which are weighed in by the machine and system operator according to the specified dosage instructions and

then pre-mixed with the base polymer and other additives in one of the container mixers from Mixaco of Neuenrade. Once a mixture has been processed into pellets via the twin-screw extruder, a sample of it is immediately tested in the laboratory for purity, precise colour and flowability. Only when both correspond exactly to the specification defined in the recipe is the entire order processed. "Since we produce around the clock, the shift supervisors were instructed by the colourists to compensate for even the smallest colour deviations independently," Michael Trapp praises his team. ■

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