

Some like it hot

- **LANXESS expands range of heat-resistant yellow pigments for high-performance polymers**
- **Tailor-made pigments for the various levels of heat stability required**
- **Optimized price–performance ratio for coloring high-temperature plastics**

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Cologne – Specialty chemicals company LANXESS has expanded its Colortherm Yellow pigment range for heat-resistant high-performance plastics. Two new inorganic yellow pigments are now available, namely Colortherm Yellow 5 and Colortherm Yellow 26. They are based on iron oxide and zinc oxide respectively and specially designed for cost-effective coloration in a temperature range of between 220°C and 260°C. With equally high color strength at the same color space, they offer plastics manufacturers and processors an excellent compromise between the best-in-class Colortherm Yellow 20 and Colortherm Yellow 30 products, which are heat stable up to 300°C.

Thermal stability as a quality factor

Plastics can now be used in applications that would have been considered impossible just a few years ago. High-performance polymers with special physical or chemical properties are increasingly replacing metal, glass and ceramics. They are used for special applications in vehicles, electronics and process engineering as well as medical applications. As the use of technical plastics in high-tech applications becomes more widespread, the requirement profile for the pigments used for coloring is also growing. In particular, the heat stability of the colorants is becoming a decisive quality factor. In the case of organic pigments, high processing temperatures often lead to accelerated decomposition; but inorganic alternatives can be subject to color variations at temperatures above 180°C.

For reliable yellow coloring of high-temperature polymers, LANXESS offers the modular Colortherm Yellow product range. It comprises the iron oxides the Colortherm Yellow 5 and Colortherm Yellow 20 as well as Colortherm Yellow 26, Colortherm Yellow 30 and Colortherm Yellow 3950 zinc ferrites. The range covers not only the color spectrum of light, saturated yellow shades but also orange tones. Plastic formulations can thus be easily realized at processing temperatures of up to 300 °C.

Due to their special manufacturing process, the color strength of the zinc ferrites Colortherm Yellow 26 and Colortherm Yellow 30 is up to 20 percent higher than comparable products. This means a corresponding lower level of pigment addition is required to color the plastic.

“The special feature of our Colortherm Yellow product range is the high flexibility in pigment selection,” said Stefano Bartolucci, Global Market Segment Manager for Plastics at the Inorganic Pigments business unit at LANXESS. Depending on the type of plastic, the pigments used can mean that varying levels of thermal stability are required – or, to put it more accurately, are sufficient. “In the case of coloring polyethylene, for example, it is sufficient for the pigments used merely not to exhibit any color changes at processing temperatures of around 240°C. However, for applications using polyamide, polypropylene and polyphenylene sulfide, thermal stability of around 300°C is essential,” explained Bartolucci. “By expanding our Colortherm Yellow range of special pigments, we have given processors the option to choose the right pigments for them, tailored to suit the type of plastic to be colored and the requisite thermal stability,” he added.

Thanks to an extensively equipped plastics technical center, LANXESS is able to provide customers with comprehensive advice in the use of its pigments. Its services also include analyzing thermal stability in customer-specific plastics applications. “From sample-

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loading to colorimetric analysis, all the necessary modules can be actuated via automated processes. This allows us to carry out highly specific tests with the highest accuracy,” said Bartolucci.

Images



Consistent quality is a crucial requirement for plastics coloration. LANXESS ensures maximum product reliability by constantly monitoring the raw materials used and maintaining ongoing quality control using testing methods in accordance with global standards at its own in-house laboratories. Photo: LANXESS AG



The yellow pigments of the Bayferrox and Colortherm brands from LANXESS are used for all common polymer materials as well as for engineering thermoplastics. The products have been specially developed to enable efficient processing in all extrusion systems

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while ensuring excellent color performance even at the highest production temperatures. Photo: LANXESS AG

LANXESS is a leading specialty chemicals company with sales of EUR 6.1 billion in 2020. The company currently has about 14,300 employees in 33 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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