SIEGWERK

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Siegwerk offers new UV offset ink series with high bio-renewable content for paper & board applications

With its new SICURA Litho Pack ECO series, Siegwerk adds another sustainable ink solution with a high share of bio-renewable content further expanding its offering in line with a Circular Economy.



Siegwerk, one of the leading global providers of printing inks and coatings for packaging applications and labels, is now offering a new sustainable UV offset ink series for non-food paper and board applications: SICURA Litho Pack ECO. The new product range is formulated with a high bio-renewable content, providing an environmentally friendly alternative to standard UV inks.

The formulation of the new SICURA Litho Pack ECO series consists of more than 40% of renewable and vegetable-based components showing a four times higher share of bio-renewable content than the average standard UV ink. Furthermore,

the series is free of TMPTA, Benzophenone as well as CMR CAT. 1 and CMR Cat. 2 components. It is a low odor ink series and especially designed for all kinds of paper and board substrates. SICURA Litho Pack ECO is suitable for all non-food packaging applications where special attention is paid to the packaging's environmental impact and circularity. The series shows excellent ink performance and a high color strength. Next to high dot gain sharpness and an excellent flowability, Siegwerk's new UV offset range offers a very stable ink/water balance even during long runs as well as a good film flexibility for post-processing. The product range contains four color process inks according to ISO, Pantone colors, base inks, special colors as well as flexo OPV.

"With SICURA Litho Pack ECO we deliver once again on our commitment to drive the change towards a Circular Economy by supporting the development of circular packaging with innovative and eco-friendly inks and coatings," says Mustafa Guler, Vice President BU Sheetfed EMEA at Siegwerk. "With 40% bio-renewable content, it is not only comparable to certain conventional oil-based inks, but it also represents a new eco-friendly alternative for UV offset printing. Its formulation is particularly designed for recycling and therefore for not impacting the recyclability of paper and board substrates at all." Test runs regarding the series' deinkability are currently under way to further determine its potential to also improve recycling of UV-printed paper and board packaging.

According to Siegwerk, increasing the bio-renewable content in inks can support the de-fossilization when sensibly used. Bio-renewable materials also come with challenges for example regarding sustainable sourcing and the preferred end-life concept of packaging.

That's why the company only works on bio-renewable inks and coatings that support a circular end-life solution like recycling. "We generally support the ambitions to increase bio-renewable content where possible and in line with the three levers of a Circular Economy – reduce, reuse and recycle," adds Guler. "Not all raw materials can be replaced by bio-renewable one's going forward.

However, increasing the amount of these materials in our solutions plays a significant role in meeting our goals, and close a gap where there are inevitable material losses and leakage."

Although, it is widely discussed that bio-renewable resources own the potential to complement a Circular Economy as a non-fossil raw material source, there is neither a standard definition of the term "bio-renewable raw material" nor a universal consensus on how to calculate bio-renewable content in printing inks. That's why Siegwerk has decided to build up a definition of its own, taking into consideration current scientific and political discussions and arguments. According to the company's experts especially raw materials either of vegetable, animal or microbial origin that underwent material utilization for the production of chemicals, basic materials and other bio-based products are of interest to be used in ink formulations. Water or materials embedded in geological formations are in turn explicitly not considered as being bio-renewable. "When calculating the bio-renewable content of our inks we focus on the actual share of raw materials with bio-renewable origin that are present in the respective ink formulation, taking all constituents into consideration," explains Alina Marm, Head of Global Sustainability and Circular Economy at Siegwerk. "Thereby, our calculation refers to the sum of all components present in a raw material, also taking into account substances and solvents - except water - that are excluded in the methods commonly used so far, such as ASTM D6866, EN 16640 and NAPIM."

Transparency plays a key role in creating sustainable and eco-friendly packaging solutions, that's why Siegwerk provides detailed data about the bio-renewable content of each of its formulations. To make the information even more relevant for its customers, the company differentiates between wet-ink and dried-ink content when calculating the bio-renewable content of its inks. The wet-ink value considers all ink components and indicates the bio-renewable content of the ink product as such. In turn, the dried-ink value only considers the solid content without solvents and other volatile components that evaporate during

drying. This indicates the bio-renewable content of the ink on the final print product and is therefore especially relevant for converters and end users. To be able to calculate the bio-renewable content for all its formulations, Siegwerk collected and analyzed the bio-renewable share of each raw material strictly considering the molecular level to be able to differentiate between bio-renewable and fossil components. Today this information requirement is also part of the company's comprehensive Raw Material Introduction Process enabling a continuous overview of all used raw materials and their corresponding bio-renewable shares.

Sustainability means progress to Siegwerk. That's why assessing ways of enhancing the ecological footprint of its inks with no loss of performance is one of the company's key R&D goals since decades. Here, the company strongly believes in the benefits of a Circular Economy and focuses its development efforts on inks and coatings that concretely enhance the performance and recyclability of packaging and thereby enabling the design of circular packaging solutions. Further extending the company's portfolio of sustainable and eco-friendly product solutions will concretely support the renewability and further enhance the recyclability of packaging.

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