SIEGWERK

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Another milestone in the use of sustainable printing inks

Flexographic printing ink system for flexible sheets receives Material Health Certification GOLD from Cradle to Cradle Certified™

Awarded the Material Health Certification (MHC) GOLD, the recyclable printing ink system for flexography is used in the recyclable stand-up pouch for the Frosch brand. Copyright Photo: Werner & Mertz

Once again Werner & Mertz, in cooperation with its Reyclate Initiative partners, has pioneered a new printing ink system for applications way beyond its own industry. With the ink manufacturer Siegwerk Druckfarben AG & Co. KGaA, the EPEA Switzerland GmbH (Environmental Protection Encouragement Agency), and the global packaging and paper company Mondi, the Mainz cleaning products maker has developed a recyclable printing ink system for flexography which has been awarded Material Health Certification (MHC) GOLD. The use of sustainable printing inks is a significant step in designing packaging according to the Cradle-to-Cradle® principle. "In the spirit of the Open Innovation approach promoted by the Werner & Mertz Recyclate Initiative, the certified ink series with the product

name 'NC 270' is not patented. It may be and should be used by other companies," said Torsten Haas, Packaging Developer at Werner & Mertz.

Closed cycles down to the smallest detail

Within the Recyclate Initiative, all packaging is developed in accordance with the Cradle-to-Cradle® principle, that is, designed from the start to go into a closed material cycle and to pose no risk to human health and the environment. Sustainable and healthy raw materials are just as important as packaging's recyclability after its use phase. That's why, in addition to the bottles and caps made of recyclates, sustainable printing inks are critical for a product's recyclability. With the Material Health Certification, the safety of the solvent-based printing ink NC 270 is now confirmed scientifically for biological cycles. Gold certification is awarded exclusively to products that "do not contain carcinogens, mutagens or reproductive toxicants with plausible exposure routes," according to the MHC.

"The *New Green Deal* of the EU Commission calls for safe and reliable plastic packaging that is sustainable for coming generations and the environment. This project is the guide to that goal. It has been confirmed by an independent third-party with the only certification system for cycles," said Albin Kälin, CEO of EPEA Switzerland, an accredited assessment body for Cradle-to-Cradle Certified™ and MHC Standard.

Development of a second printing ink system

In 2017 Werner & Mertz, Siegwerk and EPEA Switzerland developed a sustainable UV ink for offset printing as many pigments used in the standard process did not comply with the Cradle to Cradle Certified™ requirements for certification. The developed UV offset printing ink series, which also received MHC GOLD status, is used for the labels of the Frosch brand Citrus Shower & Bath cleaner.

With the ink series NC 270 for flexographic printing, the Werner & Mertz Recyclate Initiative has developed the second important printing process for packaging. The flexographic printing ink system can be used to print polyolefin plastic sheeting such as polethylene and polyproplylene. It also is well suited to the stability and resistance properties required for the stand-up pouch.

"We are proud that we could contribute an element to the development in this outstanding groundbreaking project. Now that a solvent-based ink for flexographic printing with MHC Gold certification is available, many 100 percent recyclable packaging solutions based on this single-layer PE stand-up pouch can be realized for the food and non-food sectors," said Dr. Stefan Häp, Brand Owner Collaboration Team at Siegwerk.

Integrally sustainable stand-up pouch

The idea for a sustainable flexographic ink came up in the joint development project with Mondi for a completely recyclable stand-up pouch (StripPouch). Honored with the German Packaging Award and the World Star Award, the project yielded the first pouch, which, thanks to the monomaterial and removable printed panels, can be recycled at a high quality level. The independent Institute Interseroh said in its assessment that the stand-up pouch has "very good recyclability that cannot be optimized any further." Having created optimum conditions for the technical cycle, Werner & Mertz and Mondi wanted to do the same for the biological cycle. Because Mondi uses only flexographic printing for the StripPouch, the cooperation partners from 2017 came together again and drew on their earlier work to develop sustainable printing inks for yet another printing system.

"The joint project on the development of the StripPouch was such a success because everyone involved pulled together from the very beginning. With the use of sustainable and certified printing inks, we are taking another big step together toward the circular economy and packaging solutions that are designed

with sustainability in mind," said Jens Kösters, Manager of Technical Services at Mondi Halle, Werk Steinfeld.

By the end of 2020 the new Siegwerk NC 270 printing inks will be used in series production of the first stand-up pouch for creme soap for the Frosch Senses brand.

Werner & Mertz:
For more than 150 years from its site in Mainz, Werner & Mertz GmbH has become established in the European market as an innovative company with its trusted brands Frosch, emsal and green care Professional. Werner & Mertz adheres to sustainable, environmentally-friendly business principles and regards its pursuit of sustainability as an established company tradition. With the Frosch Initiative and select project partnerships, Werner & Mertz paves the way to groundbreaking sustainable solutions beyond its own industry. www.werner-mertz.de

Mondi:
Mondi is a leading global packaging and paper company that contributes to a better world with innovative packaging and paper solutions. We are active along the entire supply chain – from forestry management and the production of pulp, paper and plastic sheeting to the development and manufacturing of efficient industrial and consumer goods packaging. Sustainability is the heart of our strategy and an essential element in our business. One of our exemplary services is our customer-centric EcoSolutions in which we pose the right questions in order to find the most sustainable solution. In 2019 Mondi reported revenue of 7.27 billion EUR and an adjusted EBITDA of 1.66 billion EUR.
Mondi has a primary listing on the JSE Limited for Mondi Limited under the ticker MNP, and a premium listing on the London Stock Exchange for Mondi plc, under the ticker MNDI. Mondi is a FTSE 100 constituent, and has been included in the FTSE4Good Index Series since 2008 and the FTSE/JSE Responsible Investment Index Series since 2007.

EPEA:

EPEA Switzerland GmbH supports companies in different fields of activity with the development and implementation of the Cradle to Cradle® Design Concept. EPEA Switzerland is an accredited assessment body for the Cradle to Cradle Certified™ and Material Health Certificate Standard.
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