



Another milestone in the use of sustainable printing inks

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

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 Siegwirk 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 Reyclate 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.



Awarded the Material Health Certification (MHC) GOLD, the recyclable printing ink system for flexography is used in the recyclable stand-up pouch for the Froch brand. Copyright Photo: 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, Siegwirk 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 polyethylene and polypropylene. 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 Hüp, Brand Owner Collaboration Team at Siegwirk.

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.

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