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KDS tested Siegwerk's first LED UV flexo inks for food packaging and label applications

Tomasz Dąbrowski, owner of KDS Sp. z o.o. Sp. k., talks about the company's move into LED UV printing and its experiences as first-time user of Siegwerk's SICURA Nutriflex LEDTec ink series.

KDS Sp. z o.o. Sp. k., a leading manufacturer of specialty labels in Poland, is one of the first printers in Europe who invested into LED UV printing technology. The team around KDS' owner Tomasz Dąbrowski intensively screened the market situation and evaluated all aspects of this new technology. "When we started looking into LED UV as a new technology that potentially could complete our business offering, the topic has not yet been that present at the European market how it is today," remembers Tomasz Dąbrowski. "The chemistry was not fully

ready that days and we really needed to deeply analyze the situation and the individual benefits of the existing printing machines on the market."

In 2014, the printer finally decided to buy a printing machine that offered the best flexibility in terms of expected chemistry progress. With this investment the first LED UV machine was installed in the EMEA region. Today, the Polish label manufacturer already works with two LED UV printing presses. "We haven't taken the decision to start working with LED UV systems because our customers concretely asked for it, but we just have seen a chance for profit that will unfold over the years," Tomasz Dąbrowski adds. "We have seen the potential of the technology and decided to add it to our offering to be able to go an innovative and forward-looking way together with our customers."

UV printing is a growing market driven by the technology's convincing benefits

In general, UV printing offers benefits like for example fast curing speed, flexibility of the ink film, high print quality, durability and no emission of volatile organic compounds (VOC). Due to the fact that UV inks dry in a matter of seconds, the printed material can be immediately processed when coming out of the press, which saves printers money and time. UV printing can be used with almost any surface, absorbent or not, and therefore offers printers and brand owners a vast selection of inflexible and flexible print substrates. Besides, UV printing results have more resistance to scratches, wear and tear as well as weathering when compared to conventional printed materials. The UV technology also allows for higher gloss levels, brilliant colors and coatings as UV inks are not absorbed into the surface but rather sit on top which creates a sharp and clear print quality.

Compared to conventional UV printing, LED UV offers further advantages for the user

In contrast to conventional UV emitters that feature mercury vapor lamps, LED diodes only emit the light of a very limited spectral range, which avoids very

high-energy IR radiation as well as hazardous UVB and UVC rays. Other benefits include energy efficiency, low heat generation, the long service life of LED UV lamps, as well as zero generation of ozone and therefore no need for suction removal. Furthermore, UV power is available as soon as an LED UV system is activated, so that the process does not require any warm-up phase. “Especially, the aspect of an ecologically friendly printing was one of the key aspects for stepping into this new technological field,” explains Tomasz Dąbrowski.

Increasing demand for migration optimized UV ink systems

Expectations of UV printing inks are very high, particularly in the food and pharmaceutical packaging segment – users want the highest level of product safety at minimal migration risk coupled with optimal efficiency and short production time. As UV inks and varnishes contain low-molecular photoinitiators, acrylate monomers or other materials with a relatively high migration potential, there is an increasing need for low migration ink systems when especially printing on packaging and labels for food. “After having installed an adequate machine we needed to find a promising ink supplier to convince our customers with best LED UV printing results,” tells Tomasz Dąbrowski. KDS has worked with three suppliers during the last years in order to identify the best fitting partner to leverage the business potential of LED UV printing.

KDS looked for an international ink supplier with local presence in Poland, they didn’t want to work with a distributor or dealer. “For us it was essential to have local support. We were looking for a partner with all capabilities and technical know-how available in Poland and with a wide UV ink portfolio including migration optimized LED UV ink solutions,” summarizes Tomasz Dąbrowski KDS’ expectations. “It was also very important for us to find a supplier with whom we would be able to shape the future of LED UV printing together.”

At the end, Siegwerk could convince KDS during the selection process. “With more than 180 years of experiences Siegwerk offers us a solid expertise and a

deep technology know-how in printing combined with a global as well as local manufacturing and service network," explains Tomasz Dąbrowski. In 2009, Siegwerk's ink specialists already were the first to demonstrate the use of inks, which had been matched to the specific radiation spectrum of LED UV light. With *SICURA Nutriflex LEDTec* the company also has launched the first migration optimized LED UV ink series for food packaging and label applications to the market. "That's exactly the UV ink specialist we were looking for," says Tomasz Dąbrowski. Both companies extensively worked together on the validation of Siegwerk's new *SICURA Nutriflex LEDTec* ink series. By doing this, KDS was one of the first customers testing the new migration optimized LED UV flexo inks. "The results were more than convincing," he adds.

Since then the companies work together as partners and Siegwerk is now supporting KDS on its challenging way as first mover in LED UV technology in Poland. "We are very happy to be the selected partner of KDS and are looking forward to further drive the LED UV technology into the market," says Joanna Siwek, Sales Manager Poland at Siegwerk. "Going forward, we will work on the expansion of applications that will enable printers like KDS to use LED UV inks for their full range of print jobs." This year, KDS has even won the first place in "Art Of Packaging – Professional" in the category "Packaging – Label". The idea of this domestic competition is to promote innovative and future-oriented ideas. This success proves, Tomasz Dąbrowski has made the right decision to build up a forward-looking business with best quality and state-of-the-art technology.

Today, an increasing number of printers are opting for LED UV technology regardless of the printing process used. With its potential for eco-efficiency, cost-effectiveness and productivity advantages, it is definitely one technological advance of recent years that will drive future development in the printing industry.

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