



Press Release – May 30th, 2016

Vivid effects thanks to new printing technology

Saueressig and Merck are developing ways to print packaging with RGB colors.

For more than 50 years, full-color images have been produced in two ways: CMYK for print; RGB for screens. Both models are so ubiquitous that most people rarely think about other options for color reproduction.

In RGB printing, packaging can be created that has iridescent radiance. Using pigments developed by Merck, it is possible to print images of several colors directly onto a black substrate. Until now, packaging had to be printed exclusively on a background of white or of another light color. With CMYK, a black background was achieved by overprinting the CMYK colors at full saturation. In RGB printing, the approach is completely different: full-strength red, blue, and green complement each other to produce white on a black substrate.

This new technique uses highly-reflective, pearlescent colors in red, green, and blue, as well as a silver-white color. In CMYK printing, the "K" represents a definite black that the mixture of cyan, magenta, and yellow cannot entirely achieve. The silver-white color in RGB printing is used in a similar way. It results in a brilliant white that cannot quite be achieved by combining the RGB colors.

Merck contacted the experts at Saueressig to implement RGB printing. Testing revealed that gravure printing is the ideal system for transferring the pigments. In gravure, the volume of the ink wells can be adjusted to the color in use with extreme precision. "Since the RGB effect pigments differ in volume from those used in normal printing, Saueressig's RGB specialists ensure good results," says Volker Hildering, Sales Manager for RGB Printing at Saueressig GmbH + Co. KG. "They have the expertise and know-how in gravure and reproduction to evaluate preliminary color proofs from the CMYK printer and to convert them."

The effect in RGB printing is mysterious. The image appears to shimmer and to be illuminated from within. These packages stand out from the crowd at the point of sale – a new way of seeing things that has not existed before. The advantages of RGB colors are many and varied. Designers get a larger color space, a palette of more colors and saturations, as well as a surface offering a previously unknown level of glossiness. New opportunities present themselves for designers to develop exciting packaging and to unleash their creativity.

The concept for this new kind of printing emerged from a 2014 brainstorming session between creative designers and the Performance Materials Unit at Merck KGaA in Darmstadt. Their idea was to turn the standard color model on its head. What would happen

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if you used RGB colors to print on a black substrate? The realization of this thought led to many months of tests and refinements. Then, Merck succeeded in showcasing the first significant color innovation in more than a century: a technique for RGB printing.

"At Saueressig we are happy to be a part of this huge innovation in printing," says Dr. Anna Zumbülte, Innovation Manager at Saueressig GmbH + Co. KG. "The RGB printing technique is still relatively new. We are expecting improvements at all stages of the process in the coming years."

Volker Hildering adds, "RGB will not supplant CMYK as a printing method. It will be an alternative to enable products to stand out from the crowd. When you take a package printed in RGB from the shelf, you'll know that it is something special."

You can find additional information and impressions about RGB at the Saueressig GmbH + Co. KG booth at drupa in Düsseldorf (Hall 3, Booth B24) or at the Merck KGaA booth (Hall 12, Booth C55).

About Saueressig

Saueressig is a renowned expert in premium rotogravure and special machinery solutions. The company supports customers along the entire prepress process and improves profitability by applying innovative solutions to the complex challenges faced by brand owners, printers and converters in the reproduction of brand assets. Saueressig owns more than 150 patents and has more than 60 years of experience. The internationally expanding company serves customers from ten production sites worldwide. Saueressig is part of the brand deployment group of SGK. SGK is a division of Matthews International Corporation (NASDAQ GSM: MATW). For more information visit: saueressig.com

About Merck KGaA

Merck KGaA, Darmstadt, Germany, is one of the world's leading suppliers of effect pigments for the coatings, plastics, printing, cosmetic, food and pharmaceutical industries. Effect pigments underscore the emotional impact of color and are an important design element when creating surfaces with special impressions or qualities. Application possibilities range from cars to packaging and high-tech products up to building facades.

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