

News Release

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Merck KGaA, Darmstadt, Germany, Showcases Innovative Effect Pigments and Printing Technologies at Drupa 2016

- **RGB printing: SpectraVal™ pigments – The innovation in printing**
- **Virtual Embossing 3D (VE3D): effect printing with depth**
- **Securalic® Reveal: invisible trademark protection that works**
- **Talks and workshops**

Darmstadt, Germany, May 24, 2016 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, will showcase innovative effect pigments and printing technologies within its overall Oceans concept at Drupa 2016, the world's leading trade show for printing. From May 31 to June 10, 2016, visitors to our stand can expect to see surprising adaptations of the colorful underwater world for novel packaging design with innovative pigments and technologies. As part of the Print City consortium, our company will enable visitors to experience innovative packaging, entirely in keeping with the Drupa motto, "Touch the Future". Talks and workshops on the adjacent Touchpoint Packaging stage will amplify the visitor experience and consulting services at our stand.

RGB revolution: technology and effect pigments for innovative products

Merck KGaA, Darmstadt, Germany, thinks beyond boundaries and is revolutionizing the color and printing world with materials and innovative technology for RGB printing, for which a patent application has been filed. Until now, only self-lighting systems such as displays and screens have been able to show the additive RGB color space, in which the three components of light, red, green and blue, combine to form white. Its variety of colors comes very close to the natural color space.

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However, printing does not make use of light. Printing technologies previously had to manage with the subtractive CMYK color space, in which the components cyan, magenta, yellow and key combine at full intensity to form black, albeit with a lesser variety of colors than RGB.

An innovative technology and the four new SpectraVal™ effect pigments from Merck KGaA, Darmstadt, Germany, in red, green, blue and white, make RGB printing possible. The result is prints that literally capture light, making the printed image appear with extraordinary brilliance and depth.

Drupa visitors will witness a world debut as we show sample packaging with RGB printing for the first time. This new printing technology lends a particularly distinctive, fascinating appearance, not only to packaging of exclusive products, but also to fine shrink sleeves and labels as well as to high-quality brochures, large-format posters and decorative foils.

Packaging with a new dimension: Virtual Embossing 3D

The Virtual Embossing 3D (VE3D) effect printing from Merck KGaA, Darmstadt, Germany, gives prints new depth, made possible thanks to an innovative printing technology that has been geared to the perfect interplay of effect pigments from Merck KGaA, Darmstadt, Germany. The VE3D print leaves a lasting impression that gives the end product the specific three-dimensional effect and deceives the eyes. The print motif itself appears elevated, but the surface remains completely smooth.

Visitors to Drupa can experience this unique 3D effect based on sample packaging with various materials such as paper, cardboard and film.

Functional and secure: invisible brand protection with Securalic® Reveal

All too often, third parties hope to profit from the success of fine products and brands. Bar codes, holograms and labels used as certificates of authenticity can be easily counterfeited and removed. With the Securalic® Reveal and Securalic® Reveal+ product ranges, Merck KGaA, Darmstadt, Germany, offers manufacturers the possibility to effectively protect their high-quality products and put a stop to counterfeiters. The taggants individually selected by the customer are integrated into the material itself during production. They remain invisible in the end product's

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plastic or the packaging's printing ink until a special device equipped with an infrared detector makes them visible.

Drupa attendees can learn about brand protection opportunities with the Securalic® Reveal and Securalic® Reveal+ infrared taggants. In addition, they can experience the new convenient R2 detector, which can distinguish various taggants from the Securalic® Reveal+ range from each other.

Sample packaging with maritime colorfulness

Our stand at Drupa 2016 will be part of an overall 400-square meter consortium called Print City. Our 70-square meter area will invite attendees to dive into an underwater world. The maritime variety of blue variations will provide the background before which the shimmering colorfulness of the marine life can unfold. Specially developed high-end packaging will feature underwater flora and fauna motifs to demonstrate the innovative power of new products and technologies from Merck KGaA, Darmstadt, Germany. Packaging is a key element of winning at the first moment of truth: the point of sale. However, unlike advertising whose impact requires continuous spending, design grows sales for much longer periods of time without additional investment. The design and the quality perception of the packaging define the quality perception of a product.

Our sales representatives and technicians will be available on all days of the trade show to answer visitors' questions. In addition, we will participate in the talk and workshop program on the adjacent Touchpoint Packaging stage.

Merck KGaA, Darmstadt, Germany, will be located in Hall 12, Stand C 55 at Drupa 2016 in Düsseldorf, Germany, from May 31 to June 10.

Our innovative products and technologies will be showcased during the Touchpoint Packaging program, Hall 12, Stand B 53, at the following events:

"Inspirational Packaging for the Future", talk, May 31, June 3 and June 8 (3:00 to 3:30 p.m.)

"Inspirational Packaging for the Future: How to realize it", workshop, May 31, June 3 and June 8 (3:30 to 4:30 p.m.)

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“RGB printing with pearl effect pigments. An introduction”, Markus Weber, Merck KGaA, Darmstadt, Germany, talk, June 1 (12:00 to 12:30 p.m.) and June 4 (12:30 to 1:00 p.m.)

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About Merck KGaA, Darmstadt, Germany:

Merck KGaA, Darmstadt, Germany, is a leading science and technology company in healthcare, life science and performance materials. Around 50,000 employees work to further develop technologies that improve and enhance life – from biopharmaceutical therapies to treat cancer or multiple sclerosis, cutting-edge systems for scientific research and production, to liquid crystals for smartphones and LCD televisions. In 2015, Merck KGaA, Darmstadt, Germany, generated sales of € 12.85 billion in 66 countries.

Founded in 1668, Merck KGaA, Darmstadt, Germany, is the world's oldest pharmaceutical and chemical company. The founding family remains the majority owner of the publicly listed corporate group. Merck KGaA, Darmstadt, Germany, holds the global rights to the Merck KGaA, Darmstadt, Germany, name and brand. The only exceptions are the United States and Canada, where the company operates as EMD Serono, MilliporeSigma and EMD Performance Materials.