

FKuR Kunststoff GmbH  
Siemensring 79  
47877 Willich, Deutschland

Press contact:  
Denise Martha  
Phone: +49 (0) 2154 /92 51-17  
Fax: +49 (0) 2154 /92 51-51  
E-Mail: [marketing@fkur.com](mailto:marketing@fkur.com)  
Internet: [www.fkur.com](http://www.fkur.com)

**FKuR at CosmeticBusiness 2019:  
Cosmetic tubes from biobased polyethylene - saving  
resources, recyclable and promoting sales.**



*With Braskem's Green PE, FKuR has a family of biobased plastics in its portfolio, which has proved to be a great success with tube producers. It is a sustainable, environmentally compatible and easily printable alternative to fossil based counterparts. Picture © FKuR*

Willich, Germany, May 2019 – Cosmetic tubes made from Braskem's biobased Green PE combine sustainability and recyclability along with attractiveness at the point of sale so meeting the demands of brand owners and end consumers. FKuR, a leading producer and distributor of bioplastic granulates, will present successful applications at CosmeticBusiness 2019 in Munich on 5<sup>th</sup> and 6<sup>th</sup> June, in hall 3 booth E02.

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## Application specific biopolymers

FKuR's portfolio covers a wide range of biobased plastics for the production of cosmetic packaging. Having good barrier properties and durability, all grades provide the required resistance to the ingredients. This is combined with excellent printability giving an attractive product without having to use secondary packaging. The biobased polyethylene Green PE produced by Braskem from renewably sourced sugar cane, is ideally suited for the extrusion blow molding of tubes. Depending on the application, HDPE grades with more than 90 % of biobased content, or LDPE grades with more than 95% of biobased content, as well as LLDPE grades with more than 80% of biobased content (according to ASTM D 6866) are available. Furthermore, with its Terralene LL 1712 FKUR offers a ready-to-use compound for tube production based on Green PE.

The mechanical characteristics and the recyclability of these materials are the same as those of conventional fossil based PE. Hence, they can be used for identical applications and are also 100% recyclable in the same PE waste stream. As a sales support measure, brand owners can use Braskem's license-free "I'm green" logo on the tubes. The use of this logo requires the communication of the renewable portion of the product, which should be verified by C14 analysis according to ASTM D6866. Also certificates from independent certification bodies can be used, such as the ["OK Biobased"](#) from TÜV Austria or ["DIN tested"](#) by DIN Certco with its corresponding points rating system.

## First applications – attractive and successful



As a result of customers desires and the end users' trend of increasingly considering sustainability and environmental compatibility when making purchasing decisions, **Emballator Tectubes**, a Swedish producer of injection molded and extruded plastics and aluminum tubes, made the transition to biobased Green PE several years ago. Supported by Polymerfront, the Swedish distributor for FKUR, the company had previously conducted intensive tests with Green PE and with the alternative PLA. The biobased PE was chosen as

a result of its better water barrier and ease of processing.

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Jan-Erik Svensson, Strategic Purchasing, at Emballator Tectubes comments: “As the first producer who used Green PE for our tubes, we faced a considerable challenge. Special compounds were developed, all processing parameters and the molds were optimized, and after several production trials and result analysis the optimum solution was reached. Again, the help of Polymerfront was extremely valuable.” Today, the company uses Green PE for tubes in a variety of sizes from 5 to 275 ml, and also uses this bioplastic to make caps.



Another pioneer in the use of biobased polyethylene is **LageenTubes**, a leading manufacturer of tubes for the cosmetics, body, hair and oral care, pharmaceutical & food industries. They have been active worldwide and for more than 50 years. The company uses Green PE for its sugarcane tubes, citing unrestricted recyclability as an important argument for Green PE. Timor Benari-Shuster, Marketing Communications Manager, says: “At the beginning, more than six years ago until recently, we had to do a lot of convincing work and had to demonstrate the suitability of biobased plastic with supporting facts about the durability and quality. Today, the industry has recognized that tubes made from Green PE have the same performance characteristics as conventional PE and are therefore suitable for cosmetic primary packaging. Lageentubes offers the sugarcane tube in both formats mono layer and co-ex 5 layers. A good argument was also that the change to Green PE does not require any changes in the production or investment in tooling.”

At LageenTubes the opportunity to directly digitally print cosmetic tubes made from Green PE is also new. Benari-Shuster continues: “With this



possibility, we now offer a revolutionary direct digital printing that allows design freedom such as end-to-end-printing including the cap, 360° decoration without a gap or overlaps with realistic images, shades, gradients, and halftones, customized and also personalized on-demand.” LageenTubes will present their sugarcane tube at CosmeticBusiness Hall 2 Stand B19.

At its Wasungen/Germany site, packaging specialist **Tubex** produces tubes made by co-extruding Green PE with a barrier plastic. Among other things, the company supplies **Swox**, a Munich-based manufacturer of special sun protection products for outdoor athletes.

Katharina Kestler, Public Relations, at Swox affirms: “Our customers have a natural interest in protecting the environment and are fully aware of their responsibilities. That is why Swox also took a closer look at packaging and finally chose Green PE in close cooperation with Tubex.” Sandra Storandt, Account Manager Plastic Tubes at Tubex adds: “We see a steadily increasing customer demand for sustainable packaging solutions, which we can usually fulfill thanks to our close cooperation with the bioplastics expert FKUR, because Green PE is environmentally friendly, compatible with the product and easy to recycle.”



A future-oriented user of such tubes is also the Austrian bio-cosmetic label “**Hands on Veggies**”. Its biocosmetic products, marketed under the same name, contain valuable ingredients from garden vegetables such as pumpkins, carrots, kale & co. **Multitubes**, a Dutch expert in the field of plastic tubes for cosmetic, food, pharmaceutical and industrial applications manufactures the tubes from Green PE and prints them with bright fresh colors. The use of biobased plastic

also creates a real added value, as the company is showing the consumer that it is taking its environmental thinking to the very end and is adopting a logical conclusion.

### **The beginning of a promising development**

Patrick Zimmermann, Director Sales & Marketing at FKUR summarizes: “Green PE offers ideal properties for this purpose. That's why our cooperation with cosmetic tube manufacturers is already very successful. But in fact, we see the examples given here only as the beginning of a promising development. They show how biobased plastics can be used to particular advantage in this area of application, because they also clearly point out the environmental awareness of brand owners on the point of sales.

Based on this, we are involved in the development of further tube applications in the cosmetics and healthcare sectors, where we advise on application technology and if necessary also develop customer-specific modifications of our bioplastics. A good example of this is our Terralene PP as a partially biobased plastic with the properties of polypropylene, used for the production of e. g. the caps with and without film hinges.”

**More information on tubes made from biobased PE:**

**Braskem:** <http://plasticoverde.braskem.com.br/site.aspx/plastic-green>

**Emballator Tectubes:** <http://tectubes.com/en/green-pe-tubes/>

**LageenTubes:** <https://www.lageentubes.com/2016/10/02/1111/>

**Tubex:** <https://www.tubex.de/kunststofftuben.html>

**Swox:** <https://www.swox.com/de/produkte/>

**Hands on veggies:** <https://www.handsonveggies.de/>

**Multitubes:** <https://multitubes.nl/bio-based/>

**About FKUR:**

*The FKUR group is a medium-sized, privately held group of companies focusing on the development, production and marketing of high-quality special compounds and the distribution of plastics specialties.*

*The group currently includes FKUR Kunststoff GmbH, one of the leading suppliers of bioplastics compounds for flexible packaging solutions and engineering applications, and FKUR Polymers GmbH, specializing in the development and production of TPE and PP / PE compounds.*

*The product portfolio of the FKUR group comprises the FKUR Kunststoff GmbH product groups marketed as Bio-Flex<sup>®</sup>, Biograde<sup>®</sup>, Fibrolon<sup>®</sup>, Terralene<sup>®</sup>, Terraprene<sup>®</sup> as well as the FKUR Polymers brands Macoprene<sup>®</sup>, Macolen<sup>®</sup> PE and Macolen<sup>®</sup> PP.*

*The distribution business comprises the biobased PE I'm green<sup>™</sup> of Braskem and the biobased PET Eastlon of the Fenc group.*

**More information:** [www.fkur.com](http://www.fkur.com) and [www.fkur-polymers.com](http://www.fkur-polymers.com)

**Please send voucher copies to:**

Konsens PR GmbH, Ursula Herrmann  
Hans-Kudlich-Str. 25  
D-64823 Groß-Umstadt  
[mail@konsens.de](mailto:mail@konsens.de)