

Press Release
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The circular economy in the cosmetics industry: clean beauty without compromise

Sustainable hemicellulose provides fascinating new possibilities for replacing non-renewable chemicals in cosmetic products.

Sustainability determines the future of cosmetics

The new generation of consumers are demanding and environmentally conscious. They appreciate clean beauty more than ever, putting pressure on cosmetic manufacturers and challenging existing raw materials and methods of operation.

CH-Bioforce is one of the companies that have accepted the challenge and are able to respond to it with exciting new solutions. With their revolutionary BIOFORSENSE® technology, side streams from the agricultural and industrial industries can be converted into high-value consumer products.

Replacing non-renewable chemicals in cosmetics

BIOFORSENSE technology can fractionate different biomasses into their main components: hemicellulose (XYLENSE®), lignin (LIGNENSE®) and cellulose (CELLENSE™), with high purity and yield. These biopolymers can replace non-renewable raw materials and cotton as binders, fillers, emulsifiers and textile fibres, and even as components in medical applications.

– XYLENSE, the polymeric and natural hemicellulose raw material, is of great interest to the cosmetics industry, says **Petri Tolonen**, CEO of CH-Bioforce.

– XYLENSE can be used as an emulsifier to stabilise cosmetics products. Hand, nail and facial care products and various other cosmetic products can all benefit from its excellent properties. Due to its water solubility, biodegradability and amorphous, flexible structure, XYLENSE can serve several high-value purposes, such as emulsifier, co-emulsifier, surfactant, foaming agent or humectant.

The utilisation of agricultural and industrial side streams is at the heart of CH-Bioforce's innovation. The company works together with several international brands to find solutions for the use of companies' global side streams in a sustainable and economical way.

– A lot of usable raw materials are left over. Currently, they are simply being burnt or end up as waste for no reason. Our technology makes it possible to use any biomass, such as straw or oat husk, as a raw material for polymeric hemicellulose. About 25% of lignocellulosic biomass is hemicellulose and in addition to that, we can separate the remaining 75% into cellulose and lignin, which also have their own further processing possibilities.

No compromise on quality

One example of BIOFORSENSE technology in practice is the HETKINEN brand, which uses XYLENSE as a raw material for its natural luxury hand balms.

– The scalability of our technology and process are great advantages for big and small companies. One of our business models is to license our BIOFORSENSE technology to companies that can use side streams from their production as raw material and utilise the manufactured products internally, says Tolonen.

CH-Bioforce's XYLENSE replaces xanthan as an emulsifier, making HETKINEN's lotion comfortably usable and moisturising, with a gentle scent of pure nature.

– We get the raw material for the emulsifier from oat husks, a side stream from the agricultural industry, from which hemicellulose XYLENSE is fractionated using CH-Bioforce's BIOFORSENSE technology. What's best, this sustainable and natural raw material doesn't lose any of its properties; instead, it effectively moisturizes and creates a soft texture in the product, says **Mona Isotupa**, CEO and Founder of HETKINEN.

The circular economy is the solution

The utilisation of biomass and the circular economy are strong trends – now and in the future. CH-Bioforce's operations are strongly founded on a 'from waste to value' mindset. CH-Bioforce's technology can utilise almost any biomass, which means that it is not tied to any particular biomass type. The CH-Bioforce pilot plant is located on the Smart Chemistry Park in Raisio, Finland.

– We dream of a world without plastic waste and oil-based consumer goods that end up destroying the planet. In our vision, a circular bioeconomy ensures the utilisation of industrial side streams, and natural renewable biopolymers like ours are a sustainable alternative to non-renewable raw materials, says Tolonen.

More information

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Meet us at in-cosmetics Global in Paris, 16-18 April 2024!

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