

Huntsman develops first liquid TPU for footwear industry

New SMARTLITE® O liquid TPU system for midsoles launched in conjunction with framas

The Woodlands – TEXAS: In a first for the footwear industry, Huntsman has developed a liquid thermoplastic polyurethane (LTPU) that enables the rapid manufacture of high-performing midsoles and is aligned with the circularity ambitions of brands manufacturing sports and athleisure footwear.

Easier to use than expanded forms of TPU, which require complex procedures such as supercritical foaming and steam chest molding, [SMARTLITE® O LTPU](#) system can be processed in a single step that uses significantly less water and energy and generates less waste and carbon emissions. Crucially, Huntsman's SMARTLITE® O LTPU system can also be converted and repurposed into new materials either in its post-industrial or post-consumer form.

Huntsman's SMARTLITE® O LTPU system is being officially unveiled today (19th September 2023) at SIMAC in Milan and at the FDRA's Shoe Sustainability Summit in Portland, Oregon. To launch this unique, lightweight product, Huntsman has joined forces with the framas Group. Ready to partner with brands on sampling and the fulfilment of orders, framas has capacity to produce up to two million soling constructions per annum using the material.

Key benefits of SMARTLITE® O LTPU:



Easy to process: Processed on low pressure casting machines, SMARTLITE® system is simple to use, scalable and can help streamline shoe manufacturing. situ polymerization, adhesive-free bonding of midsoles to TPU outsoles, and fast rates, cycle times for the SMARTLITE® O LTPU system are short.



High performance: With a density of 250 kg/m³, Huntsman's SMARTLITE® O system produces superior, hydrolysis resistant midsoles that offer long-lasting, cushioning comfort with a rebound of more than 50%.



Circular: SMARTLITE® O LTPU system is the ideal solution for brands looking circular midsole materials and lower the carbon footprint of their manufacturing processes – without compromising performance or quality. Supporting circular initiatives, soling units featuring a SMARTLITE® O LTPU midsole and a TPU outsole can be mechanically repurposed – if the correct reprocessing infrastructure is available. For example, manufacturers can mix post-industrial recycled SMARTLITE® O LTPU with virgin TPU to create new outsoles and cupsoles. Huntsman can also make recycled versions of the material.



Freedom of design: For footwear designers, SMARTLITE® O LTPU system offers new creative opportunities, delivering enhanced surface definition without silver speckles or the popcorn effect. It is also easy to color and create striking fade effects.

Alexis Bortoluzzi, Senior Director Global Elastomers at Huntsman said: “For footwear brands pursuing circularity and looking to lower their carbon footprint, SMARTLITE® O LTPU system provides a very clear pathway. The material stands out from the competition, offering multiple advantages over and above PU, ETPU and EVA. A number of big brands have already expressed considerable interest in the technology, and we look forward to working with framax to bring the material and all its benefits to market.”

Andreas Quade, Executive Board Director, Innovation & Technology at framax, said: “Huntsman’s SMARTLITE® O LTPU system is incredibly innovative. Helping to enable circular projects, it is a definitive step towards more environmentally friendly practices in the footwear industry. We’re excited by the interest the material has already generated and look forward to further discussions about the opportunities it presents.”

For more information, go to: <https://framax.com/en/smartlite-o-launch/> or visit Huntsman at SIMAC in Milan on Tuesday 19th September at Booth A47-B46 in Pavilion 14 to see samples of the company’s new SMARTLITE® O LTPU technology. You can also find out more about SMARTLITE® O LTPU at the FDRA Sustainability Summit in Portland, Oregon. During the summit, Craig Roberts, Global Brands Manager at Huntsman, will introduce the benefits of the new material, show samples and answer questions. He will also be attending the Brews event. Alternatively, contact: paola_palma_faoro@huntsman.com. Enquiries can also be directed to framax, which has purchased a twelve-station GUSBI machine for sampling and development at its HQ in Pirmasens Germany. The Group also has two 80-station GUSBI machines in its facility in Vietnam for production ramp up. Email: smartlite-o@framax.com

About Huntsman:

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated and specialty chemicals with 2022 revenues of approximately \$8 billion from our continuing operations. Our chemical products number in the thousands and are sold worldwide to manufacturers serving a broad and diverse range of consumer and industrial end markets. We operate more than 60 manufacturing, R&D and operations facilities in approximately 30 countries and employ approximately 7,000 associates within our continuing

operations. For more information about Huntsman, please visit the company's website at www.huntsman.com.

Social Media:

Twitter: www.twitter.com/Huntsman_Corp

Facebook: www.facebook.com/huntsmancorp

LinkedIn: www.linkedin.com/company/Huntsman

Forward-Looking Statements:

Statements in this release that are not historical are forward-looking statements. These statements are based on management's current beliefs and expectations. The forward-looking statements in this release are subject to uncertainty and changes in circumstances and involve risks and uncertainties that may affect the company's operations, markets, products, services, prices, and other factors as discussed in the Huntsman companies' filings with the U.S. Securities and Exchange Commission. Significant risks and uncertainties may relate to, but are not limited to, volatile global economic conditions, cyclical and volatile product markets, disruptions in production at manufacturing facilities, reorganization or restructuring of Huntsman's operations, including any delay of, or other negative developments affecting, the spin-off of Venator Materials Corporation, the ability to implement cost reductions and manufacturing optimization improvements in Huntsman businesses and realize anticipated cost savings, and other financial, economic, competitive, environmental, political, legal, regulatory and technological factors. The company assumes no obligation to provide revisions to any forward-looking statements should circumstances change, except as otherwise required by applicable laws.

SMARTLITE® is a registered trademark of Huntsman International LLC or an affiliate thereof in one or more, but not all, countries.

While all the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING herein is to be construed as a warranty, express or otherwise. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose. The sale of products referred to in this publication is subject to the general terms and conditions of sale of Huntsman International LLC or of its affiliated companies.

© 2023. Huntsman Corporation or an affiliate thereof. All rights reserved.