

Huntsman launches new SHOKLESS™ polyurethane systems to help protect electric vehicle batteries

New technologies will be officially unveiled at the Battery Show Europe in June 2024

Tienen, Belgium – Automotive experts from Huntsman have added a series of new lightweight, durable polyurethane foam technologies to the company's battery solutions portfolio that have been developed for the potting and fixation of cells mounted in electric vehicle (EV) batteries. The new range also includes products that can be used as a moldable encapsulant in battery modules or packs.

The new SHOKLESS™ foam systems can offer a flexible choice for helping to safeguard the structural integrity of EV batteries in case of impact or a thermal event. The product family includes a range of low to high density foams that can be used via common polyurethane dispensing processes and can offer a wide processing window for extra handling flexibility.

These new solutions can help provide thermal as well as structural protection at a cell, module, or pack level combined with fast processability compared to non-polyurethane alternatives. The moldable encapsulant version of the SHOKLESS™ system can further expand design and manufacturing options for EV battery manufacturers and OEMs.

With robust mechanical properties, the new SHOKLESS™ systems can offer very good compression and tensile performance with high elongation to failure. Elastic performance can remain stable at different operating temperatures ranging from -35°C to 80°C*. The new systems have also been developed to be easy to work with thanks to their low viscosity and ability to cure quickly at low temperatures.

Alex Stepuk, Global Market Segment Leader Automotive at Huntsman, said: "As the drive to create more electric vehicles continues to accelerate, we are applying our know-how to the challenges facing automotive manufacturers and developing new products that help to address clearly identifiable gaps in the market. We are delighted to extend the breadth of our SHOKLESS™ portfolio into the electric vehicle battery sector."

SHOKLESS™ polyurethane systems are generally compatible with a number of different manufacturing methods such as open- and closed-pour (injection) and cold-cure molding. Certain products in the range can also be dispensed with high pressure equipment. Huntsman also offers simulation and modeling capabilities that can help customers customize and optimize processing parameters, and the structural and thermal performance of the materials, so they can get the very best out of the SHOKLESS™ system they select.

Huntsman is a global leader in MDI-based polyurethanes, serving automotive customers

along the value chain. Huntsman delivers innovative, value-added solutions to the world's best-known car brands. Specialisms include lightweight, enhanced comfort and working towards sustainability ambitions in seating, interior trim, acoustic insulation, EV batteries and composite panel applications.

For more information about SHOKLESS™ systems, please email: polyurethanes_eu@huntsman.com. You can also find out more at the Battery Show Europe by visiting Huntsman at 4-D80. The Battery Show Europe takes place from 18-20 June at Messe Stuttgart, Germany. Further information is also available here: <https://www.huntsman.com/products/shokless>

** Based on DMA (dynamic mechanical analysis) tests conducted in Huntsman's R&D laboratory in Tienen, Belgium.*

First tests were performed in June 2023.

About Huntsman:

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated and specialty chemicals with 2023 revenues of approximately \$6 billion. 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 25 countries and employ approximately 6,000 associates within our continuing operations. For more information about Huntsman, please visit the company's website at www.huntsman.com.

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