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HUNTSMAN
Enriching lives through innovation

Huntsman to showcase sustainability through advanced chemistry at JEC World 2024

Huntsman returns to JEC World 2024 in March with a resolute commitment to advancing towards sustainability through cutting-edge chemistry. Visit booth K32 in hall 6 at JEC World in Paris from March 5th to 7th where the team will reveal groundbreaking innovations that showcase Huntsman's commitment to driving towards sustainable transformation in the global composites industry. This dedication is grounded in three fundamental pillars: reducing environmental impact; maximizing performance and longevity; and optimizing process efficiency and productivity.

Huntsman will showcase the following innovations at the event:

ARALDITE® Mass Balance Concept (MBC), low carbon footprint, high performance resins: ARALDITE® MBC resins represent a breakthrough portfolio of sustainable resins. These resins, while technically identical to standard fossil-based ARALDITE® resins, hold a REDcert2 certificate, validating the replacement of fossil-based raw materials with sustainably certified biomass. Notably, they can showcase a remarkable reduction of up to 100% in CO_2-equivalent emissions, without compromising performance nor requiring any re-qualifications.

ARALDITE® solutions developed for towpregs in pressure vessels: The ARALDITE® LY 3512 / ARADUR® 1571 / ACCELERATOR 1573, is an epoxy-based formulation engineered to optimize hydrogen pressure vessel production with towpregs. This formulation can enhance towpreg materials' storage capabilities at room temperature. Typical benefits can include precise rheology, tackiness, and cohesion of carbon fiber filaments, enabling swift impregnation and accurate placement during production while maintaining thermo-mechanical performance. ARALDITE® pressure vessel resins are also available as a sustainable MBC version.

ARALDITE® epoxy systems developed for composite battery enclosures, trays and underbody shields: Huntsman's proven range of intrinsic fire-retardant ARALDITE® FST and unfilled mass production systems can help manufacturers of composite parts to meet part specific structural, fire, thermal, environmental, and mass production requirements. Used via WCM, RTM and HP-RTM processes these systems can enable short cycle times with low scrap rates. ARALDITE® battery resins are also available as a sustainable MBC version.

Polyurethane resins revolutionizing EV battery enclosures with low carbon footprint option: Huntsman's polyurethane (PU) resin portfolio can help to facilitate the swift creation

of underbody and upper cover battery protection components, offering manufacturers the chance to accelerate production by up to 30% compared to existing technologies*. Innovative resin options available can offer increased strength, structural performance, and design flexibility, and can support energy-efficient manufacturing methods. Products are also aligned towards the sustainability goals and net zero ambitions of customers, with ISCC PLUS mass balance certified options available which can help to reduce attributed carbon footprint (GWP_{100} including biogenic CO_2) by up to 50% compared to incumbent fossil-based technologies**.

Novel composite technology developed for lightweight seat back frames: At JEC World, Huntsman will be introducing an innovative glass fiber-reinforced PU composite technology developed for car rear seat pan applications. Leveraging Reaction Spray Molding, Huntsman's RIMLINE® RSM solution can facilitate lightweight, efficient production cycles, helping to meet the demands of electric and hybrid vehicles through high integration capabilities and optimal surface quality.

In addition to these groundbreaking innovations, the Huntsman booth will feature an array of compelling applications, serving as tangible examples of the company's cutting-edge solutions in action.

Visitors can explore product demonstrators, including:

- **Battery covers developed for electric vehicles** utilizing ARALDITE® or VITROX® solutions, and showcasing the versatility of Huntsman's products in e-vehicle applications;
- A Type IV **hydrogen pressure vessel** illustrating Huntsman's comprehensive system portfolio for wet-filament-winding and towpreg manufacturing processes;
- An automotive **composite front hood with improved carbon footprint**, using an MBC ARALDITE® resin, exemplifying the high-performance capabilities of Huntsman's materials in structural automotive applications.
- An impressive **1/3-scaled prototype for special defense missions** and **technical demonstrator of void fillers** and adhesives usages in sandwich structures will both illustrate the long-lasting presence of **ARALDITE®, EPOCAST® and EPIBOND®** in aerospace applications.
- Additionally, an aerospace **pultruded fuel pipe** will illustrate how **MIRALON® carbon nanotubes** can enhance safety by reducing static electricity accumulation.

In addition, numerous structural adhesives as well as innovative recyclable packaging, including ARALDITE® HP 9102 adhesive, developed to achieve **sandwich bonding**, will demonstrate Huntsman's commitment to delivering high-performance solutions across many industries.

Finally, Huntsman will highlight its recently launched **Technology Portal for Collaborative Innovation**, inviting engagement with innovators and manufacturers across the value chain. This initiative aims to foster external collaborations, providing avenues for sharing innovation challenges, problem-solving opportunities, and tailored manufacturing solutions.

Visitors are invited to explore these innovations at Huntsman's JEC World 2024 booth. The company's composite experts will be in attendance and available to discuss how

Huntsman's 'sustainability through advanced chemistry' initiative is helping to reshape the composite landscape.

For more information, please visit Huntsman at JEC World 2024 in hall 6 at booth K32.

Footnotes:

* Compared to other competitive technologies but results may vary depending on specific component design. Data generated by 3rd party lab and owned by Huntsman. Results generated in lab or field conditions which are typical for this application. Data variations due to varying processing or ambient conditions cannot be excluded. These properties are not part of the specifications of VITROX® and RIMLINE® polyurethane systems.

** Comparison with Huntsman incumbent technologies. Source: Preliminary LCA results – cradle-to-Huntsman gate. Component for manufacturing of polyurethane systems.

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.

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