The Sustainability Imperative

Huntsman Scores Double Honors in *Future Materials*

‘Best Supplier’ Award from Takata Automotive

Patriotic Colors for Team USA

www.huntsman.com/textile_effects
The Sustainability Imperative

Achieving the goal of a sustainable textile industry is a complex balance of economic, environmental and social considerations. This requires knowhow and effective innovation from suppliers like Huntsman Textile Effects.

For the textile industry, the path to economic sustainability is not straightforward. The global economy is only now showing the first positive signs of recovery. Environmental concerns are becoming more urgent and consumers are more demanding and vocal than ever. Increased legislative pressure and the rising cost of raw materials, energy and labor amplify the challenges. Now more than ever, brands and textile mills are seeking partners that can help them navigate these complex issues.

Consumers still want aesthetics and functionality from their textiles but are increasingly asking what goes into the clothes they are buying. This along with pressure from NGOs and government bodies is driving brands and retailers to push for greater transparency of the dyes and chemicals used by their suppliers; the textile mills. At the same time, governments are introducing stricter legislation and clamping down on polluters along all parts of the value chain.

As a leading supplier of chemicals and dyes, Huntsman Textile Effects is committed to working with you to confront the industry’s toughest challenges. Decades of innovation and experience make us the ideal partner to help brands and mills achieve the cost-effective production of textiles with not only better color, comfort and performance but the assurance of products that are safe and minimize the impact on the environment.

Through our award winning innovations, we help mills minimize water and energy consumption and avoid harmful chemicals and pollution. For example, our newly expanded range of AVITERA® SE tri-reactive dyes, reduces salt consumption by 20% to lessen water contamination, reduces water usage to 15-20 liters per kilogram of cotton fabric, saves 50% or more energy and carbon dioxide (CO₂) emissions, and shorten the time required for dyeing.

This breakthrough illustrates our approach to product stewardship. We believe in controlling the inputs, so you don’t have to worry about the outputs. We actively support industry initiatives such as the Zero Discharge of Hazardous Chemicals (ZDHC) Joint Roadmap, the Sustainable Apparel Coalition (SAC) and bluesign®. We also help mills optimize their handling, storage, use and disposal of dyes and chemicals to control costs by reducing waste and achieving consistent right-first-time performance.

With our industry partner Dyecoo we are at the forefront of developing new finishing and fluorescent
whitener technologies for waterless dyeing, to realize this game changing innovation for the industry.

The challenges to our industry are immense, but so too are our opportunities. There is much that we can do today with the sustainable products and technologies we have already developed. Huntsman is a company with a rich heritage of innovation and we continue to move ahead in collaboration with our partners. We believe that we are stronger together and we invite you to contact us to share your challenges and hopes. Our aim is to help you be more competitive, more sustainable and more successful.

Paul Hulme
President
Huntsman Textile Effects

Huntsman Scores Double Honors in Future Materials

Huntsman Textile Effects is proud to have scored a double mention in the influential Future Materials FM 100. Our EverGlide™ Low Friction Systems and PHOBOL® CP-DP and CP-DL products, our innovations in short-chain chemistry repel-and-release textile finishes with DuPont, were cited among the technical textiles industry’s best breakthroughs of 2013.

“To be cited twice in this definitive guide is a huge honor. It is testament to our ongoing effort to lead the change in our industry with product innovations that enhance competitiveness for textile producers, add value for consumers and drive sustainability across the value chain,” said Jay Naidu, Vice President of Strategic Marketing and Planning at Huntsman Textile Effects.

FM 100 is produced annually by Future Materials, a World Textile Information Network (WTIN) publication that focuses on innovation in materials technology and applications. WTIN is a global textile news and information provider recognized for its authority and market-leading coverage.
‘Best Supplier’ Award from Takata Automotive

An affirmation of quality for Huntsman Textile Effects Brazil

Huntsman Textile Effects Brazil is honored to have received ‘Best Supplier’ status from Takata South America, a world-leading manufacturer of automotive safety systems. The award recognizes our contributions in the areas of DA / UV Automotive and PES for airbag and automotive seating fabrics.

Takata is a leading global manufacturer with a broad portfolio of seat belts, airbags, interior parts and textile products. Quality, reliability and innovation are its hallmarks. Takata recently installed five additional looms and one new dyeing line at its Takata Brazil Piçarras SC plant to enhance its capabilities in seat belt production and increase capacity.

Huntsman received the coveted award from Mr. Airton Evangelista, President of Takata South America, and Mr. Vinicius Specht, Takata Purchasing Director, at a ceremony attended by the company’s management team. As a trusted high-quality supplier, we look forward to continuing to support Takata as it develops its business in Brazil and around the world.

Patriotic Colors for Team USA

Winter Olympics uniforms dyed with Huntsman wool dyes

With its vibrant colors, the Team USA uniform for the 2014 Winter Olympics in Sochi was a standout success. Our innovative LANASOL® and LANASET® dyes were vital to achieving the memorable Olympic look. More than 2000 kilograms of wool was dyed with 80 kilograms of our high-quality Huntsman Textile Effects dyes to make 650 Team USA uniforms for the opening ceremony.

The US team’s parade uniforms for the opening and closing ceremonies were designed and produced by Polo Ralph Lauren with the support of more than 40 suppliers. The US Olympic
Committee’s Official Outfitter selected a classic color palette of red, white and navy for the opening ceremony uniform, which consisted of a knit patchwork cardigan paired with a turtleneck sweater, white fleece athletic pants, black leather boots and a hat with a reindeer motif.

DICK’S Sporting Goods Innovation Week

Taking innovation to greater heights

DICK’S Sporting Goods is a market-leading U.S. retailer with more than 500 stores across the U.S. It offers quality sporting equipment, apparel and footwear at competitive prices and stocks top brands such as Nike, Under Armour and The North Face.

DICK’S is among the first retailers in the world to go beyond the sector’s traditional focus to engage with partners across the textile supply chain. In an effort to encourage deeper innovation, DICK’S held its inaugural Innovation Week at the corporate headquarters in Pittsburgh, Pennsylvania in February 2014. Huntsman Textile Effects was the only textile chemical supplier in attendance.

The Huntsman Americas Brand & Retail Marketing team engaged with DICK’S Product Development, Global Color Office, Design Department and Global Sourcing teams, as well as representatives of the various brands. The depth of this engagement stands testament to Huntsman Textile Effects’ role as a trusted ‘go-to’ partner of DICK’S Sporting Goods. Huntsman has a proven ability to understand the company’s business needs, along with the innovative solutions to support it in a competitive global textile sourcing environment.
DICK’S Sporting Goods has expressed an interest in collaborating with Huntsman Textile Effects on several fronts. It will leverage our expertise in Color Management solutions to develop color and quality assurance standards. As it continues to expand its private-label sports apparel brands, DICK’S is also interested in water and stain repellent finishings that provide moisture management while maintaining high functionality over extended washing cycles.

The Innovation Week event marked a milestone in our new business relationship with DICK’S Sporting Goods, bringing us together to collaborate on textile solutions that add value to the consumer while helping to build a sustainable textile industry!

Welspun Group turns spotlight on Collaboration

Technologies and trends at Wel Vision 2020

Huntsman Textile Effects was among several key stakeholders to present at Wel Vision 2020, a one-day event developed and hosted by Welspun Group to inform and inspire its 300-strong home textile management team. A global leader in home textiles manufacturing, Welspun supplies 14 of the world’s top 30 retailers and has an extensive distribution network that covers more than 32 countries.

As a partner of Welspun for more than a decade, Huntsman Textile Effects presented innovative solutions for the home textiles sector based on our strengths in areas such as freshness and odor control, dyeing for deep shades, color competency, digital printing and water and energy consumption. Our research and technology team was in attendance to answer questions and discuss future trends and new chemistries.

Wel Vision 2020 was held at the Babuji Memorial auditorium in Welspun City, Gujarat, India on 5 February, 2014.
Huntsman Textile Effects supports adidas textile supply chain

Seminar highlights innovation and sustainability

Huntsman Textile Effects brought together stakeholders from throughout the adidas textile supply chain to a meeting in Taiwan. The Innovation and Sustainability Seminar held on 17 December, 2013 in Taipei included representatives of close to 30 mills, as well as 12 executives from adidas Group and senior staff from Huntsman Textile Effects.

Hosted by Dheeraj Talreja, Huntsman Textile Effects Commercial Director, North East/South East Asia, the seminar was an opportunity for lively discussions about current industry challenges. Among the topics covered at the seminar were the Zero Discharge of Hazardous Chemicals (ZDHC) Joint Roadmap, new effects in sports and active wear, and innovation in rain and stain management. Participants were keen to discuss the challenges associated with transitioning to short chain fluorocarbons and non-fluorine alternatives, achieving dark shades in dyeing, and lowering water and energy consumption.

There was much interest in Huntsman Textile Effects solutions such as our new short-chain chemistry products, DICRYLAN® SD deep dye technologies and the AVITERA® SE range of eco-friendly reactive dyes. With our efforts in creating greater synergy through collaboration with brands and mills, we received a positive reception at the event, where many were in agreement on our effective technologies which can help fabrics achieve high performance and reduced environmental impact.

The seminar underscores Huntsman Textile Effects’ proactive approach to encouraging collaboration with brands and mills. We believe that collaboration is the best way for our industry to meet its challenges in a sustainable and effective way.
Innovation on the Agenda

Huntsman Textile Effects impresses at China InterDye 2014

There was a noticeable drive for innovation among attendees at this year’s China InterDye exhibition, one of the most important events on the region’s textile industry calendar. It proved to be an excellent platform for Huntsman Textile Effects to showcase our capabilities as a leading global supplier of textile dyes and chemicals.

More than 400 new and existing customers, most of whom represented Asian textile mills, visited the Huntsman Textile Effects booth over the three days of the exhibition. They met senior Huntsman staff to discuss their business challenges and industry trends, and explore our innovative products and solutions. Our finishing effects for protective textiles were particularly popular, with many attendees also wanting to know how Huntsman Textile Effects could help them move to sustainable chemistries such as short chain fluorocarbons and non-fluorine alternatives. Our expertise in resource-saving dyes and digital inks also positioned us clearly as an industry leader with the experience and knowhow to bring value to customers.

As regulatory pressures and environmental concerns escalate and production costs continue to rise, textile mills increasingly need help to overcome their challenges. With decades of experience and a wide spectrum of innovative solutions, Huntsman is the ‘go-to’ partner ready to work with you to meet the most stringent quality standards while helping to keep your business competitive and sustainable.
Organized with the support of key industry associations and government organizations, the 14th China International Dye Industry, Pigments and Textile Chemicals Exhibition (China Interdye 2014) was held in Shanghai from 16-18 April.

**SUSTAINABLE INNOVATION IN ACTION**

AVITERA® SE Reduces Salt Consumption by up to 20%

*Revolutionary poly-reactive dyes help mills meet sustainability targets*

Textile mills processing cellulosics and blends now have the opportunity to dramatically improve their environmental footprint with the latest additions to Huntsman Textile Effects’ AVITERA® SE range of leading dyes. With AVITERA® SE’s well-established 50% or more savings in water, energy and carbon dioxide (CO₂) emissions, these new poly-reactive dyes take it up a notch with reduced salt consumption of up to 20%, helping mills to meet their customers’ demands and comply to environmental requirements.

Salt promotes the absorption of reactive dyes and is the most commonly used chemical in the textile dyeing process. Unfortunately, salt-contaminated water cannot be easily treated and it takes a long time for contaminated waterways to recover naturally. These challenges are exacerbated in regions facing acute water scarcity, as in many of the world’s largest textile-producing nations.

Launched in 2010 and subject to continuous innovation ever since, AVITERA® SE dyes use tri-functional reactivity to ensure rapid and very high exhaustion and fixation for cotton and other cellulosic fibers and their blends. Less salt is required to enhance absorption and less than 5% of the dye remains unfixed, compared to between 15% to 30% for conventional reactive dyes, dramatically reducing water waste. The unreacted dye is also easier to remove at lower temperatures as it is not bound to the fabric fibers in a high-salt solution. Energy consumption and CO₂ emissions are greatly reduced since water used in the dyeing and washing-off process never exceeds 60°C.

If the whole reactive industry adopts AVITERA® SE technology, there will be significant savings of up to over 700,000 tons of salt annually, the equivalent of 30,000 rail wagons. This is approximately the distance between San Francisco and Los Angeles, which is over 500km.
The latest range of AVITERA® SE poly-reactive dyes now feature a broad palette color spectrum in the pale shades with highest light fastness.

**Benefits of AVITERA® SE**

- Temperatures never exceed 60°C
- Only 5 percent or less unfixed dye to be removed (instead of 15-30 percent)
- The number of rinsing baths is greatly reduced
- Saves more than 50 percent of water: only 15-20 liters of water to dye 1 kilogram of fabric vs conventional methods
- Saves more than 70 percent of energy vs conventional methods
- Cuts washing-off time by 50 percent
- Significant costs savings (due to reduction in water and energy required for washing-off)

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**EVENTS**

**See You There!**

With a global presence that ensures we can serve you wherever you are, Huntsman Textile Effects also actively participates in key industry events around the world.

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<td>20-23 May, 2014</td>
<td>Munich, Germany</td>
<td><strong>FESPA DIGITAL</strong></td>
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<td>Delve into our innovative solutions for inkjet printing across a wide variety of applications and fibers as we showcase our inks for use in Kyocera-based machines, Seiko Heads and Epson Heads. With our cutting edge technologies, we help you meet an extensive range of end-uses such as Apparel &amp; Fashion, Swimwear, Home Textiles, Signage and Automotive!</td>
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<td>11-12 June, 2014</td>
<td>Troyes, France</td>
<td><strong>CITEXT Europe</strong></td>
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<td>As an international focal meeting place dedicated to the technical textiles industry, CITEXT will bring together more than 300 international participants consisting of numerous users and suppliers of technical textiles. Come on down to know more about our competencies in Technical Textiles which can help strengthen the performance of your products!</td>
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| 12-13 June, 2014 | Shengze, China | **TASCC China (Textile and Apparel Supply Chain Conference)**  
With a theme of ‘Collaboration and Innovation in Green Supply Chain’, TASCC 2014 will cover the ways textile and apparel companies can innovate and collaborate at different stages of the supply chain to optimize the environmental benefits of products for better economic and sustainable development.  
Join us and other stakeholders across the textile supply chain as we engage in discussion towards a more economic and environmentally sustainable textile industry! |
| 16-20 June, 2014 | Shanghai     | **ITMA ASIA +CITME (China)**  
This milestone event featuring the unique strengths of the ITMA brand and China’s most important textile event CITME showcases the latest technologies in textile manufacturing. Join us as we collaborate with machine manufacturers in enhancing textile production processes to create better end-products that add value to the consumer! |

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The Product may be or become hazardous. The Buyer should obtain Material Safety Data Sheets and Technical Data Sheets from Huntsman containing detailed information on Product hazards and toxicity, together with proper shipping, handling and storage procedures for the Product, and should comply with all applicable governmental laws, regulations and standards relating to the handling, use, storage, transportation and disposal of the Product, and the containers or equipment in which the Product may be handled, shipped or stored.

Please note that products may differ from country to country. If you have any queries, kindly contact your local Huntsman representative.

Huntsman is a member of:

( Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers

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