Opening a new chapter in retanning technology

High-performance biopolymers

Cologne – Specialty chemicals company LANXESS has developed a new class and range of genuine retanning agents. The Levotan X-Biomer technology effectively utilizes biopolymers for a more sustainable production of high quality leather. It will be presented at the All China Leather Exhibition 2014 in Shanghai, China, from September 3 to 5.

With the new technology based on biodegradable polymers, LANXESS’ experts have accomplished an innovative leap forward in retanning chemistry. “Decades ago, the development of synthetic retanning chemistry has changed the leather industry. Now, we think the time has come for a next-generation innovation that once again opens the door to the future”, says Dietrich Tegtmeyer, Vice President of Product Development and Application at the LANXESS Leather business unit.

To become increasingly independent from fossil fuel based raw materials, the incremental substitution of petroleum-based chemicals is one of the key challenges for the leather industry in the years ahead. LANXESS is a driving force behind the formulation of advanced leather chemicals derived from renewable resources.

As an alternative to synthetic retanning agents the new patent-pending Levotan X-Biomer range includes a complete portfolio for all key steps of the retanning process. The chemistry behind it however, is completely different. All products are based on biodegradable polymers, which are produced from renewable raw materials and specifically functionalized for retanning applications in a biologically engineered process. Thus, the Levotan X-Biomer technology enables the production of wet blue leather that fulfills the high technical requirements demanded, e.g. for automotive leather or
children's footwear. At the same time, tanners benefit from a significantly improved sustainability profile.

**No compromise on leather quality**

With Levotan X-Biomer important performance characteristics for the production of high quality leather can be achieved. This has become possible through a production process where the biopolymer raw material is partly hydrolyzed into small oligomers and then converted back into modified polymers with very specific characteristics. Thus, the performance properties with respect to dyeability, fullness, tightness, selective filling as well as heat resistance and light fastness can be exactly tailored to meet the needs of the retanning applications.

**Clean waste water**

One of the key features of the new X-Biomer technology is the reduction of the retanning effluent load. Due to the amphoteric character of all products which contain both positive and negative charges a good fixation and exhaustion can be achieved. Compared to traditional retanning polymers the chemical oxygen demand (COD) is even up to 30 percent lower when using the corresponding Levotan X-Biomer product.

Another decisive advantage is the high biodegradability of X-Biomer retanning agents which are based on organic components that can easily be degraded by microorganisms in the effluent treatment. Thus, tanners benefit from a more efficient COD elimination in their waste water. The high biodegradability has been confirmed by an independent testing laboratory which even classified two of three X-Biomer products as “readily biodegradable” according to the OECD guideline 301F. The third one has also shown very good testing results with 52 percent being degraded in just 28 days.
Finally, the salt concentration is another important factor with an impact on both waste water treatment and the final leather quality. Reducing the saline freight in the float positively affects the efficiency of the whole retanning process especially with regards to fatliquoring and dyeing. Traditional retanning syntans considerably increase the salt freight. The salt concentration of the X-Biomer alternative product is far below one percent. Therefore, increased substitution of traditional syntans allows the tanners to reduce the amount of salt in the float and in the effluent.

The Levotan X-Biomer technology is fully in line with the aims of LANXESS’ initiative “Sustainable Leather Management”. This initiative is designed to extend and enhance the company’s product portfolio for sustainable leather production.

LANXESS offers products for all stages of the leather manufacturing process from beamhouse over wet end to finishing. The specialty chemicals company has one of the broadest portfolios of leather chemicals, including mineral and synthetic tanning materials, preservatives, tanning auxiliaries, fatliquoring agents, dyestuffs and numerous finishing products, e.g. polyurethane dispersions and polyacrylates. Detailed information can be found on the internet at www.lanxessleather.com.

The Leather business unit is part of LANXESS’ Performance Chemicals segment, which achieved total sales of EUR 2.13 billion in fiscal 2013.
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Forward-Looking Statements.
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