



X\_Biomer

**BIOPOLYMERS ENERGIZED BY**

**LANXESS**  
Energizing Chemistry

**X** Levotan X-Biomer® – starting the future of retanning



# STARTING THE FUTURE OF RETANNING

*Sustainability is a crucial factor for the viability of the entire leather industry. To become increasingly independent from fossil fuel-based raw materials the incremental substitution of petroleum-based chemicals is one of the key challenges in the years ahead.*

*LANXESS is a driving force behind the formulation of advanced chemicals derived from renewable resources. With the Levotan X-Biomer® technology LANXESS provides a new class and range of genuine retanning agents which effectively utilizes biopolymers for a more sustainable production of high quality leather.*

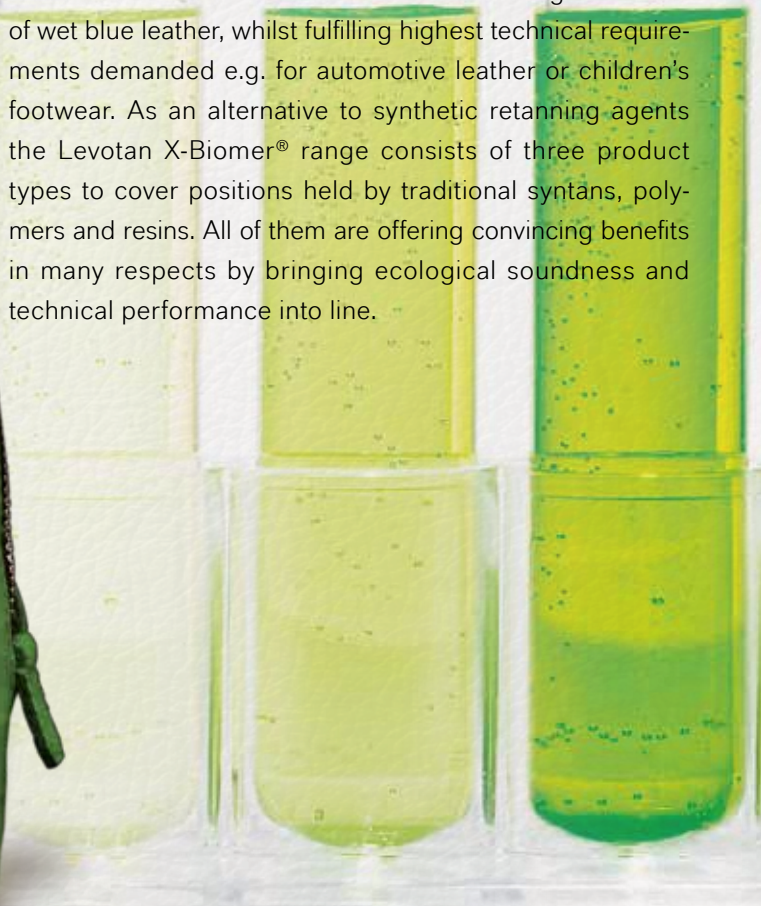
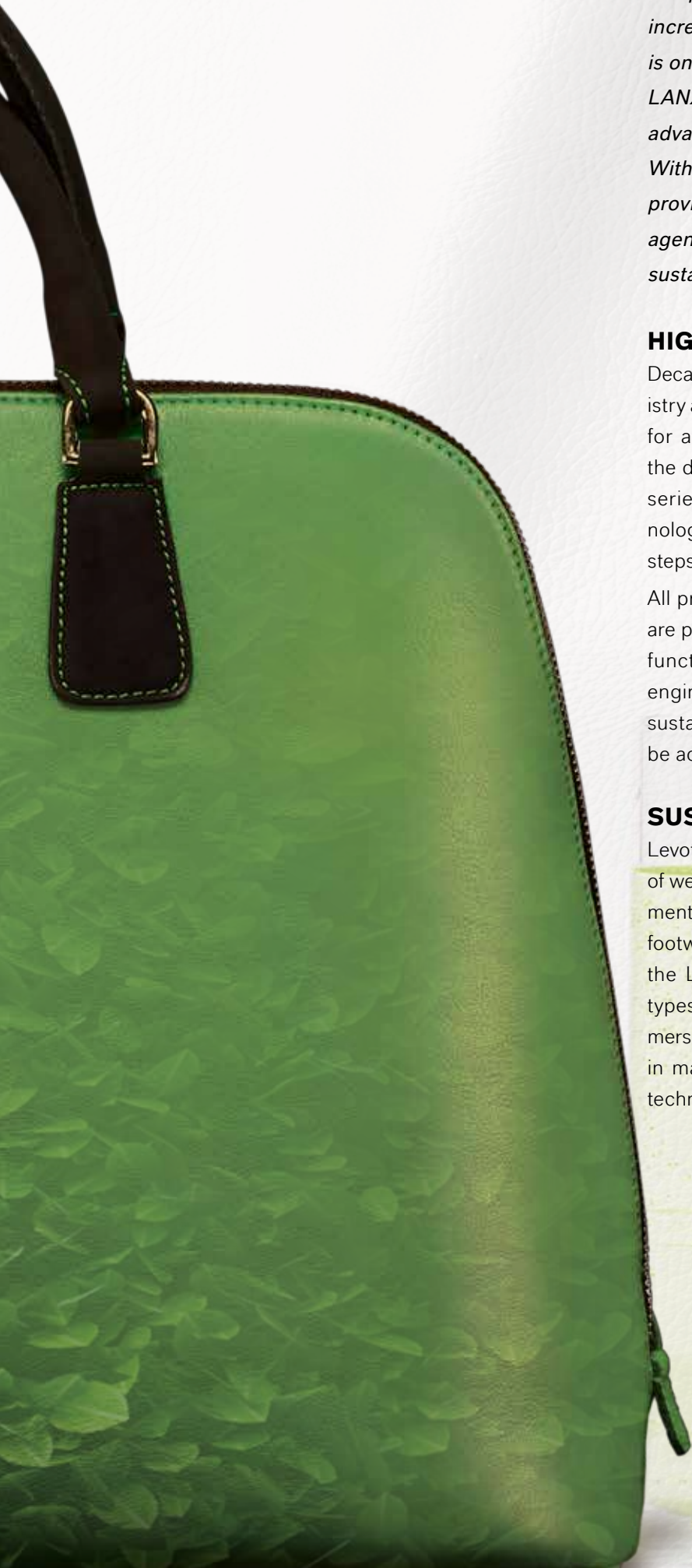
## **HIGH-PERFORMANCE BIOPOLYMERS**

Decades ago, the development of synthetic retanning chemistry advanced the leather industry. Now, the time has come for a next-generation innovation that once again opens the door to the future. The patent-filed Levotan X-Biomer® series marks the starting point of a groundbreaking technology. It includes a complete product portfolio for all key steps of the retanning process.

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, unmatched results in terms of sustainability and outstanding performance benefits can be achieved.

## **SUSTAINABILITY DRIVES PERFORMANCE**

Levotan X-Biomer® can be used for the retanning of all kinds of wet blue leather, whilst fulfilling highest technical requirements demanded e.g. for automotive leather or children's footwear. As an alternative to synthetic retanning agents the Levotan X-Biomer® range consists of three product types to cover positions held by traditional syntans, polymers and resins. All of them are offering convincing benefits in many respects by bringing ecological soundness and technical performance into line.





# THE RIGHT PRODUCT TO MEET YOUR NEEDS

Retanning with Levotan X-Biomer® products is extremely advantageous. The new range offers a unique portfolio for all main steps of the retanning process. Beside the key advantages, described in the inner part of this brochure, the choice of the right X-Biomer® product provides further tailor-made properties that bring clear benefits into the retanning process by meeting the exact requirements.

## LEVOTAN X-BIOMER® P liquid

### Application

In neutralization and/or retanning and/or fatliquoring

### Characteristics

- Improved, more natural leather handle compared to conventional “rubbery feel” of standard synthetic polymers
- Highly suitable for waterproof leather
- “Up-grading” of poor quality wet blue
- Strong filling but being reactive with high fixation and exhaustion

## LEVOTAN X-BIOMER® S liquid

### Application

In retanning and/or fatliquoring

### Characteristics

- Improved softening effect when applied in retanning stage
- Improved filling effect when applied after main fatliquoring
- Uniform milling behavior
- Good plating and embossing properties
- Brilliant dyeing properties

## LEVOTAN X-BIOMER® R powder / RX liquid

### Application

In retanning and/or rechroming

### Characteristics

- Additional fullness and tightness
- Selective filling which increases cutting yield
- Good uniform buffing and embossing properties



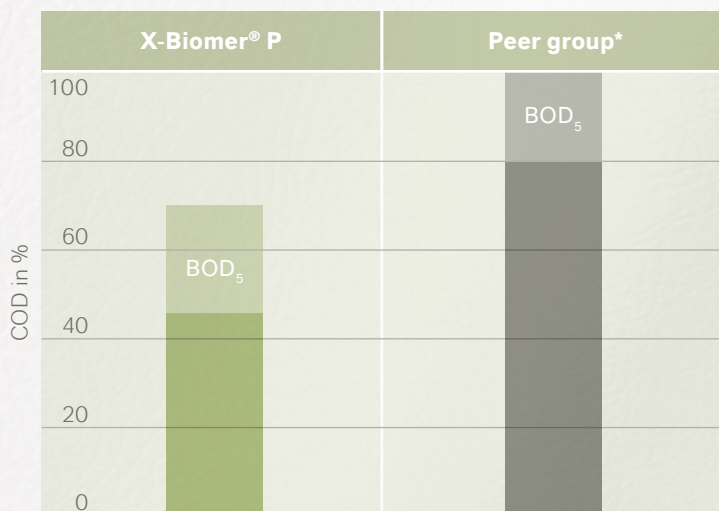


# UNIQUE PERFORMANCE BENEFITS

## High exhaustion

Minimizing the chemical load in the waste water is an important aspect for an increasing number of tanneries. Superior fixation and exhaustion is key and the Levotan X-Biomer® range is contributing to the achievement of this goal due to the amphoteric character of the products, possessing both positive and negative charges.

For example, with the correct application, the uptake of X-Biomer® P is considerably higher compared to traditional retanning polymers resulting in up to 30 % lower chemical oxygen demand (COD). What's more, testing has shown that the demand figure has a higher share of biochemical oxygen (BOD).



COD / BOD after 5 days according to DIN EN 1899-1. Comparison of Levotan X-BIOMER® P with peer group\*.

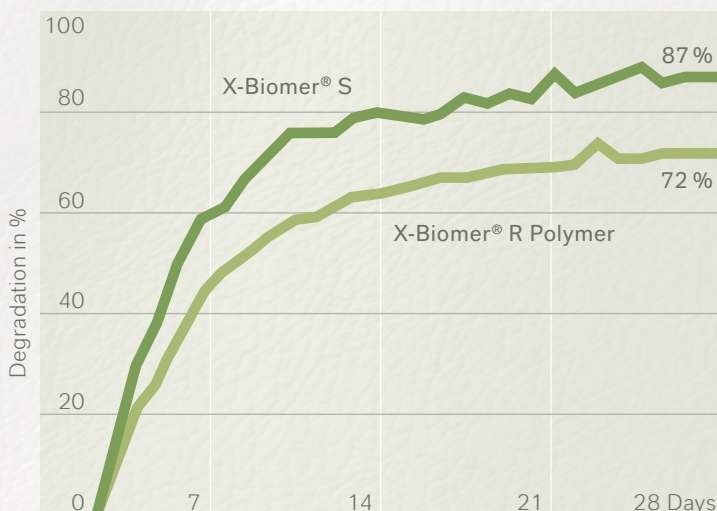
## Reduced salt content

The salt concentration is a topic of high priority for tanneries that are striving to reduce the saline freight in their effluent. Furthermore, a low salt concentration in the float also positively impacts the efficiency of the whole retanning process especially with regards to fatliquoring and dyeing. But also the risk of salt spue on the final leather is minimized. Traditional retanning syntans, for example, are known to be considerable contributors to the salt freight of the retanning effluent. Whereas, the salt content of X-Biomer® S is far below 1%. Therefore, increased substitution of traditional syntans with X-Biomer® S enables tanneries to considerably reduce the amount of salt in the float and in the effluent.

## Readily biodegradable

The Levotan X-Biomer® range is based on organic components that can easily be degraded by microorganisms in the effluent treatment plant. Hence, tanners benefit from a more efficient COD elimination in their waste water. The high biodegradability has been confirmed by an independent testing laboratory which classified the polymer of X-Biomer® R and X-Biomer® S according to the OECD guideline 301F as "readily biodegradable".

X-Biomer® P achieved a degradation of 52 % after the testing period of 28 days which is also a major improvement compared with traditional peer group products.



Biodegradation of Levotan X-Biomer® products according to OECD Guideline 301F.

## VOC-free

Levotan X-Biomer® makes a significant contribution to fulfill the increasing environmental regulations and specific industry requirements regarding eco-efficiency and consumer safety.

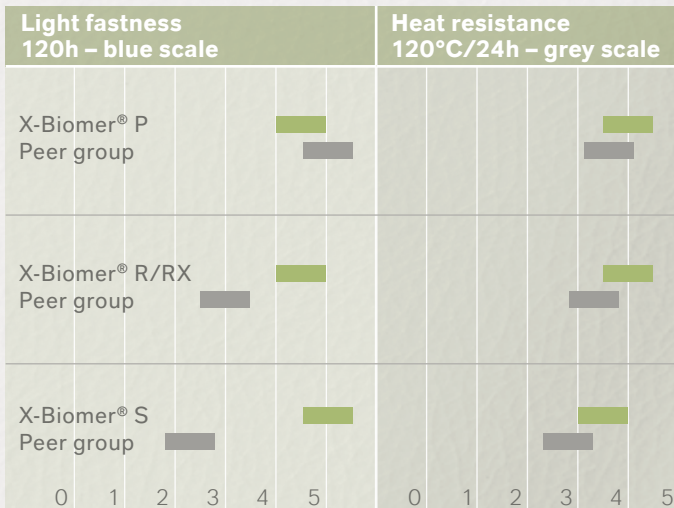
All products are VOC-free (according to European directive 1999/13/EC), and neither phenol nor formaldehyde have been used as raw materials for their production. Additionally, X-Biomer® R and RX are the first products of this type in the leather industry which are fully comparable to conventional amino-resins with respect to their technical functionality but cannot create formaldehyde upon hydrolysis. Thus, tanneries are supported to fulfill requirements regarding VOC and OEM's restricted substances lists.



### Superior leather performance

With Levotan X-Biomer® important performance characteristics for the production of high quality leather can be achieved. This has become possible through a unique production process where the biopolymer raw material is partly hydrolyzed into small oligomers. Subsequently, these intermediates are converted 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.



Heat resistance and light fastness of Levotan X-Biomer® products vs. selected peer groups\*.

### Versatile application options

Levotan X-Biomer® is based on a customized genuine chemistry specifically developed by LANXESS for the retanning process. Due to their amphoteric character, the products offer a new dimension of application and can be used at various steps of the retanning process with respectively different effects on the process and resulting leather.

One example of this “dual functionality” is the X-Biomer® S product. Applied in the usual retanning stage it promotes the softness. If, however, added after the main fatliquor it enhances the fullness of the leather.

\* Typical representatives of synthetic retanning syntans, resins and polymers.







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