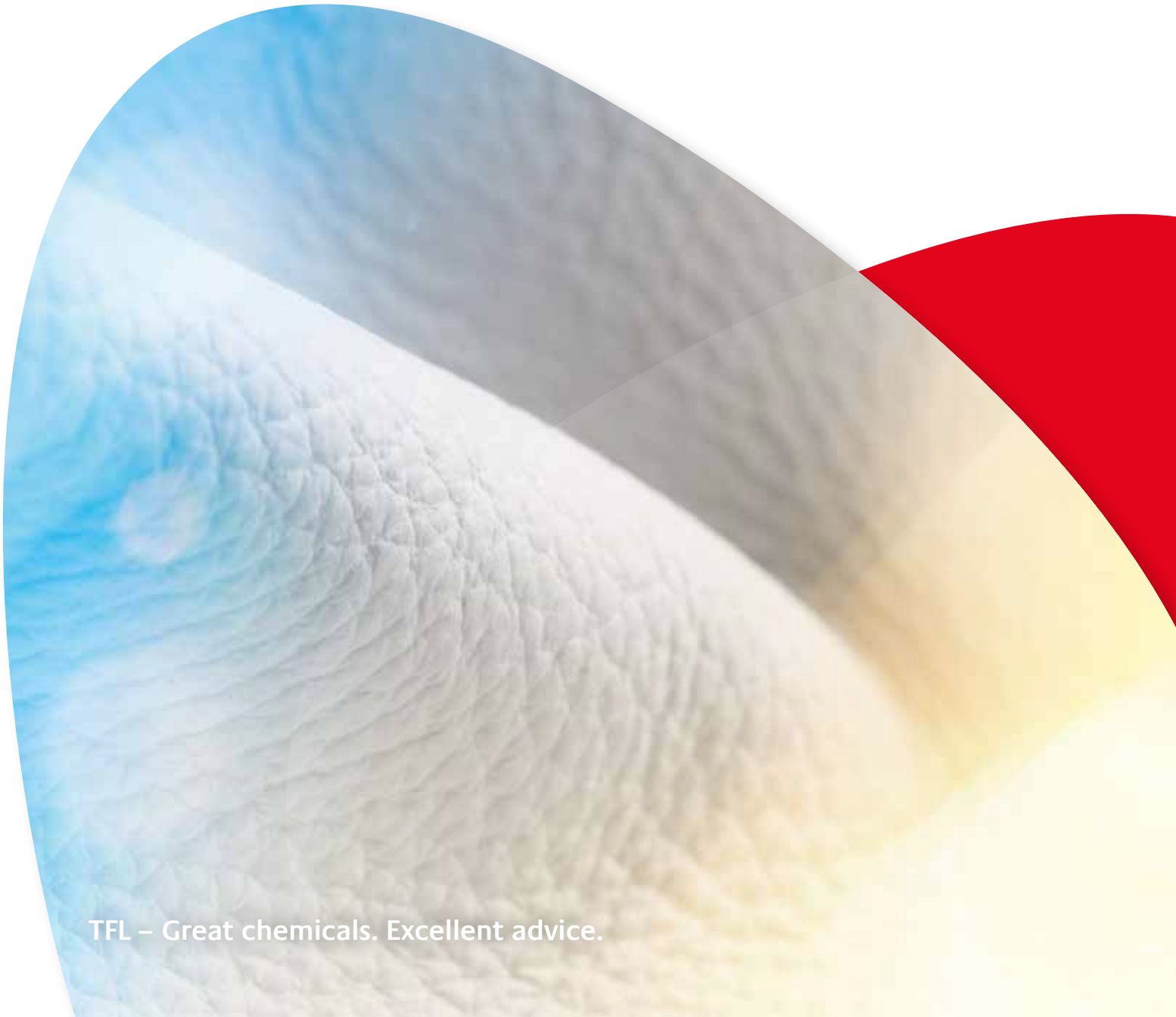
X-TAN®

Wet white – The next generation

» A sustainable tanning technology



TFL – Great chemicals. Excellent advice.

X-TAN®

Wet white – The next generation

Virtual whiteness, brilliant colors and excellent physical leather properties – these are just some performance advantages offered by X-TAN®. This next generation of organic tanning sets new quality standards in the production of wet white leather. Since the demand for ecologically produced leather is continuously growing, We have developed X-TAN® technology leading to premium wet whites with outstanding benefits. It combines excellent performance with economic and ecological benefits.

Breakthrough in organic tannage

X-TAN® is an innovative metal and aldehyde free organic tanning agent applied in an easy and robust process. It provides an efficient and environmentally friendly wet white tannage without using chemicals with critical toxicological properties. Due to the virtual whiteness of the new intermediate we now call this X-White.

Tanning with X-TAN® is easy and safe. The product itself is a whitish powder with good storage stability that is easy to dose and fully soluble even in cold water. X-TAN® also offers health, safety and environmental advantages. It is not classified as toxic or sensitizing and completely degrades into toxically uncritical products respectively.

Unique process technology

The patented X-TAN® process is based on the active ingredient polycarbamoyl sulfonate (PCMS). During the tanning process PCMS permanently cross-links the lysine groups of the collagen. This is an irreversible process and increases the shrinkage temperature to well above 70°C. In production scale trials, excellent results were obtained both on samming and shaving. The tanning process and all the outstanding performance have been carried out and confirmed in extensive tests by independent research institutes.

X-TAN® is added to the tanning bath following deliming and bating. Under these conditions, the product is stable and completely penetrates the cross-section of the pelt. This allows tanning of even thick, unsplit hides without any problems.

The actual tanning process is switched on by increasing the pH. Temperature can also be manipulated to steer the process. Both parameters can be used to adapt the process and the leather quality according to customers' requirements. PCMS completely reacts with the collagen fibers; any unutilized tanning material degrades to form toxicologically uncritical organic amines and polyurea compounds. Thus, in comparison with conventional wet white processes, no substances of health and environmental concern are formed at any stage during the tanning process.

The X-TAN® process also offers possibilities to conserve critical resources. Under production conditions, energy requirements and process time can be cut by about 10 percent.

X-TAN® – Excellent physical leather properties

X-TAN®

Superior performance

Innovative leather properties are the basis for economic success. With its superior performance, X-TAN® sets new standards in the quality of wet white tanning and meets the strict requirements of the international footwear, furniture, automotive and leather goods etc. industries with regard to the aesthetic properties and functionality.

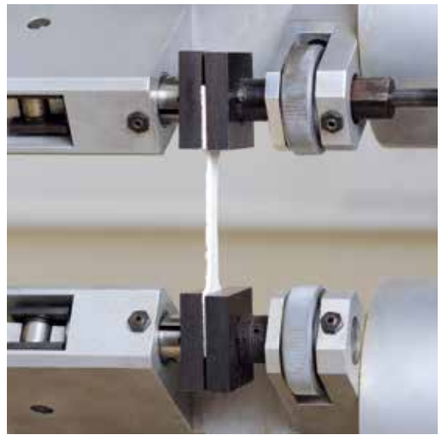
White white

X-TAN® is suitable for tanning virtually all types of leather valid for all applications. Compared with the current market standard it has noticeably better dyeability – following the tanning process the leather is virtually white, possesses excellent resistance to light and shows a good stability against yellowing. Dyestuffs penetrate easily and it is possible, with this almost white basis tannage, to obtain previously unmatched brilliant colors.

Strong and soft

X-TAN® gives the leather excellent physical properties, including improved tear resistance and aesthetics. It offers very good protection against shrinking at high temperatures and fulfills all further requirements for automotive leather. The good storage stability achieved under recommended conditions can overcome the current limitations with the existing wet white technology.

The next generation of wet white tanning – virtual whiteness can be realized with X-TAN® for the first time.



At the same time, the new technology provides excellent physical leather properties like high tear strength.

X-TAN®

Benefits at a glance

Process

- Easy Handling
- No sensitizing tanning agents
- Excellent penetration, even in thick pelts
- Tanning process is easy to control
- Wet white can be easily shaved and sammed

Performance

- Excellent whiteness
- Good dyeability leading to brilliant colors
- High tear resistance
- Good aesthetic properties
- Biodegradable leather
- Good storage stability

Sustainability

- Leather, shavings and effluent contain no tanning agents
- AOX-free
- No pickling process required
- Significant reduction of salt content in effluent
- Energy consumption decreases by ca. 10%

X-TAN® – Virtual whiteness and brilliant colors

X-TAN®

Innovation drives sustainability

Sustainability in the leather industry means greater eco-efficiency in production, processing and recycling. The sophisticated X-TAN® technology supports the responsible use of resources and significantly reduces the environmental burden caused by traditional wet white processes.

100 percent conversion

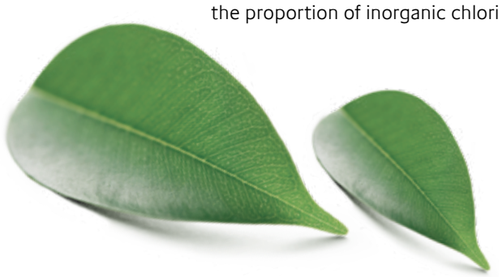
During tannage, X-TAN® reacts with the lysine groups in the collagen; any excess degrades into toxicologically uncritical amino and polyurea compounds. Consequently, the leather, shavings and wastewater contain no reactive tanning agents. Furthermore, they are free of any adsorbable organic halogen compounds (AOX) and aldehydes. This opens up a whole new range of possibilities for the industrial application of shavings – an important by-product of the leather manufacturing process.

Independent institutes have confirmed considerably better biodegradability of X-TAN® leather compared to standard. Around 50 percent of leather tanned with X-TAN® can be biodegraded within 56 days.

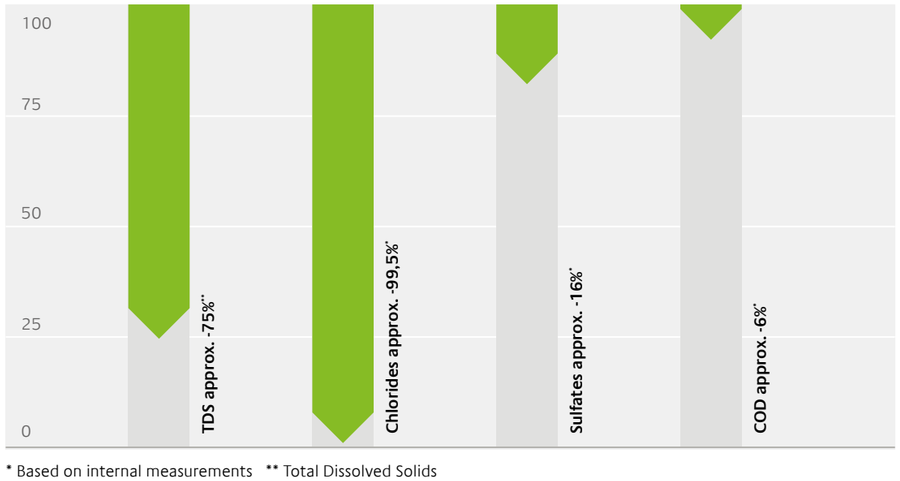
Clean wastewater

X-TAN® significantly contributes to the protection of scarce water resources. A major advantage is the fact that no pickling is required as the tanning is carried out following the deliming and bating process. Avoiding subjecting the pelt to a sharp drop in pH with the use of acids the leather does not undergo hydrolysis. The result is a lower COD value (chemical oxygen demand) and increased tear resistance as the key protein which every tanner is trying to purify is protected and maintained, rather than being degraded by acid hydrolysis.

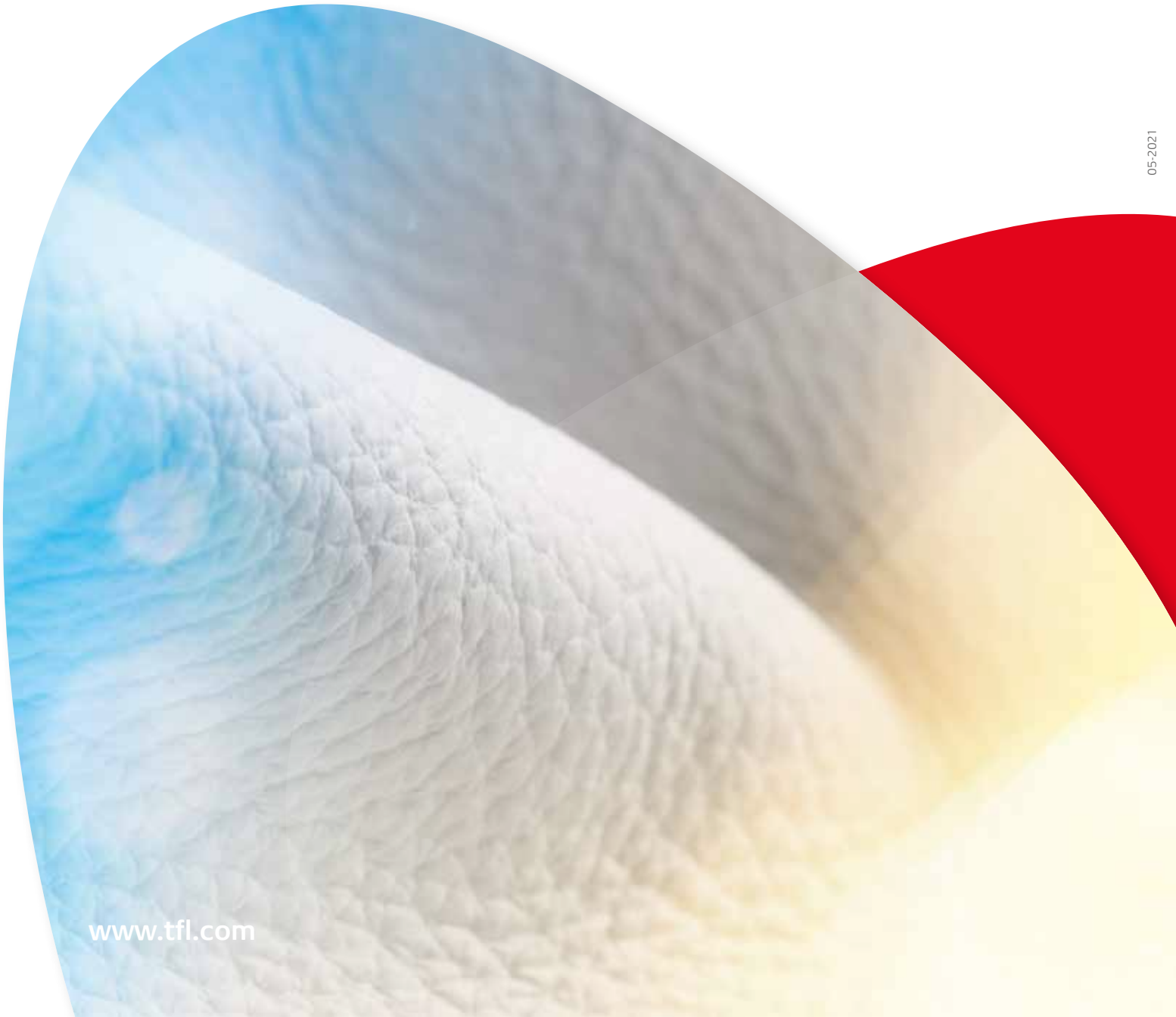
The salt load is also much lower than it is in the current standard wet white process, and in particular the proportion of inorganic chloride salts is dramatically reduced to a negligible amount.



Effluent comparision of X-TAN® vs. conventional wet white tanning. % – Improvements by X-TAN® process



* Based on internal measurements ** Total Dissolved Solids



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