TFL ECO TEC ET

Manufacturing sustainable leather

≫ How can TFL products help?

TFL – Great chemicals. Excellent advice.

Manufacturing sustainable leather

Manufacturing sustainable leather – How can TFL products help?

Consumers mainly value leather articles for their longevity and durability. As a natural material, leather pleases our senses in a way that not many materials do. Supporting the biological basis of leather, a sustainable production should consider:

→ Amount of resources used (chemicals, water, energy)
→ Emissions into the environment (gaseous, liquid and solid waste) and possible re-use of waste, by-products and also the leather articles end of life
→ Type of resources and raw materials used: eco-tox profile of chemicals; hides (fresh vs. salted; origin); energy (renewable or not)
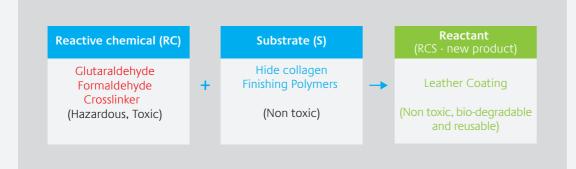
Chemicals in a sustainability strategy

When it comes to the environmental impact of the production of leather and the end of life of leather goods, chemicals play an important role. Chemicals end up in the leather but also in waste.

Therefore, the decision to use a chemical should be governed by following criteria:

→ Toxicity to humans (incl. carcinogenic, mutagenic, reproductive toxicity)
→ Environmental impact (i.e. toxicity to aquatic organisms, biodegradability, bio accumulative effects)
→ Made from resources which are faster renewable than fossil based ones

Chemical risks should not be judged on straight classification criteria only, but rather on practical risks in leather production, for consumers, the environment and whether the risks can be safely managed. A good example is the use of reactive chemicals that react during the process to such extent that they pose no health or environmental risk. The same applies for syntans that may contain some residual formaldehyde monomer (Fig. 1).

How can TFL products contribute to sustainable leather production?

Worldwide more than 450 different national and international regulations with regards to chemical safety are in existence. This makes it extremely difficult for tanneries to comply with the demands from local governments, brands and manufacturers, regarding restricted substances.

TFL's simple policy, allowing tanners to manufacture leather safe to the environment and consumers, is to produce products compliant with following major regulations:

→ EU REACH directives 1907/2006 (REACH) and 1272/2008 (CLP Regulation)
→ REACH SVHC list (no use of substances of very high concern), REACH Annex XIV
→ EU biocide product directive (BPD) 528/2012
→ ZDHC-MRSL list (materials restricted substance list issued and managed by ZDHC program)

Provided they are correctly used, leathers made with TFL products will comply with most brands and manufacturers regulations as to restricted chemicals in leather. Using trusted chemicals allows tanners to considerably reduce their restricted substance leather testing, to mainly chromium VI and formaldehyde. TFL's know-how and technical service enables users of TFL products to use them in the most effective way; which means excellent uptake in leather whilst reducing COD and BOD loads in the effluent. Current examples are the TFL low impact beamhouse and tanning technology and, solutions to manufacture chrome-free leathers with reduced COD and BOD load.

Chemical statements, can they be trusted?

TFL has established an internal testing and compliance management system which ensures a very high level of confidence. This involves good knowledge of the entire raw material supply chain for chemical synthesis. TFL does not intentionally use any restricted chemicals in their products.

Can there still be surprises?

Yes, it is possible that traces of restricted substances can be found due to contamination. Contamination levels are usually below allowable limits in the ZDHC MRSL list. But even if the limits are slightly exceeded, final leathers would still comply with brands RSL product requirements.

Risk assessment of chemicals

Reactive chemical (RC)		Substrate (S)		Reactant (RCS - new product)
Glutaraldehyde Formaldehyde Crosslinker (Hazardous, Toxic)	+	Hide collagen Finishing Polymers (Non toxic)	→	Leather Coating (Non toxic, bio-degradable and reusable)

[Fig. 1] Hazardous reactive chemicals (red) used in leather production can react during leather production to safe end-products.

Leathers made with TFL products – comply with brands and manufacturers regulations

04-2018