



New development in low salt pickling technology

C. Gabagnou, D. Herta and A. Lenglar
Competence Centre, TFL Ledertechnik GmbH

One of the major environmental problems of the tanning industry is the liquid effluents generated. These contain high amounts of organic matter, sulfates and chlorides. In tannery wastewater the high salinity cannot easily be corrected.

Common salt used for the preservation of the raw hides and skins contributes the most to the effluent salinity, followed by the salt deriving from the pickling and tanning bath. Effectively 30% of the chlorides found in the effluent originate from the pickling bath and 60% of the sulfates from the tanning bath.

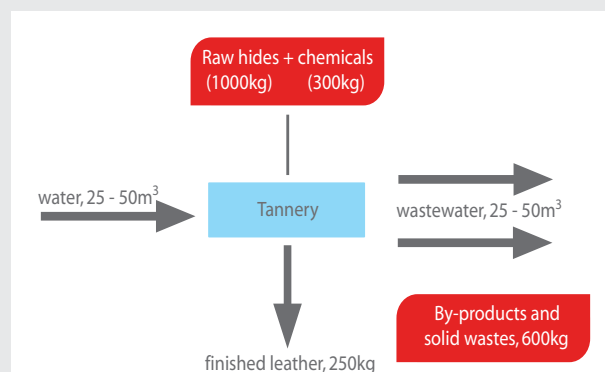
Conventional effluent treatment systems adopted by the global tanning industry are designed to reduce mainly BOD (Biological Oxygen Demand), COD (Chemical Oxygen Demand), sulfides, suspended solids and chromium. They do not address common salt or sodium sulfate.

This salinity is a critical problem in many countries and is the most difficult form of pollution that the leather industry has to manage. Within the tannery the sulfate damages concrete and chloride corrodes metal, and for both economic and wider environmental reasons, new alternatives are necessary for the reduction of salinity in effluents.

The potential of phenolic sulfonic acid acids

As industry has evolved in the last few decades, there has been a growing awareness of the need to protect the environment.

Panel 1 Simplified mass flow of a bovine tannery



This has also been promoted by the enforcement of new regulations, which are increasingly restrictive relative to the control of wastes and waste disposal as indicated in *Panel 1*.

In this context, the leather industry is obliged to look for production alternatives to minimise the negative effect on the environment, mainly in process stages having the biggest impact. In particular, the pickling and tanning remain one of the greatest contributors in terms of sodium chloride and sodium sulfate in wastewaters as shown in *Panel 2*.

Panel 2 Chloride and sulfate generated from leather manufacture

