



PULCRA PROTECTED FATLIQUOR CONCEPT®

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Pulcra Chemicals
The solution specialist

PULCRA Chemicals is a global solution provider for the leather industry offering the full portfolio of leather chemicals including a wide range of innovative benchmark fatliquors.

The well-known brands SIRIAL®, PELLAN®, PELLASAN® and SEDAFLO® have been used as main fatliquors by generations of tanners for decades. Constant innovation and development in the R&D laboratories of all PULCRA affiliates lead to ever new and improved fatliquors, which are adapted to the specific needs of the customers and meet the rapidly increasing requirements of product safety and regulations. While this development is a continuous improvement, PULCRA has made a **revolutionary change** in the attitude towards fatliquoring

products with the introduction of the **PULCRA Protected Fatliquoring Concept®** (PrFC).

The basic idea behind this innovative concept is the realization that oxidation processes in leather are often related to the fatliquoring agent. Under the influence of heat and light, oxygen can be added to mainly conjugated double bonds of the fatliquoring agent, forming peroxide radicals and organic Peroxides. These components are highly reactive and lead to various degradation reactions in leather, with the formation of hexavalent chromium Cr(VI) being the most prominent. By protecting the fatliquor, it is possible to restrain the formation of Cr(VI) in chrome-tanned leather.

The PULCRA Protected Fatliquoring Concept® consists of three pillars

Premium Raw Materials

The use of high-purity, strictly controlled raw materials reduces the risk of oxidation. Impurities can have a catalytic effect on oxidation. Waste products and production residues have varying amounts of impurities and are therefore avoided.

Up-to-date Processing

By processing natural oils, particularly sensitive multi-conjugations should be inactivated as far as possible. This drastically reduces the susceptibility of the fat chains to oxidation. These components are combined with synthetic and semi-synthetic compounds that are not susceptible to attack by oxygen.

Synergistic Antioxidant Mixtures

Synthetic radical scavengers are used in synergistic mixtures, which are precisely matched to the type of emulsion and the composition of the fatliquor. These compounds react selectively with peroxide radicals and thus interrupt the oxidation chain. They are located in the leather matrix adjacent to the fat molecule.

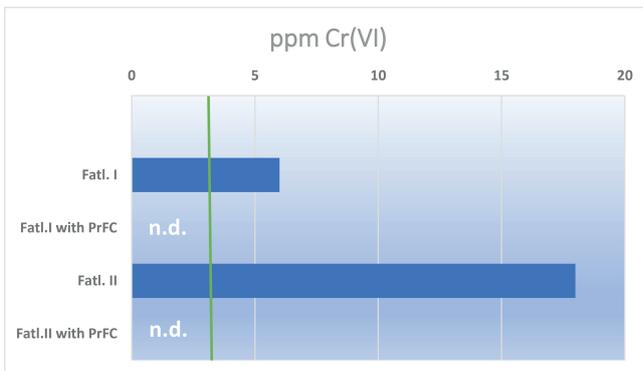
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In a global PULCRA innovation project the fatliquors in the portfolio of all PULCRA member companies were investigated and aligned with the PULCRA PrFC.

Fatliquors produced according to the PrFC were tested on neutralized wet blue for Cr(VI) formation in main fatliquors and showed undetectable Cr(VI) results after pre-ageing according to ISO 10195-2018, as shown in the figure below using two natural fatliquors of vegetable origin as examples.



Pulcra PrFC for two different fatliquors, Cr(VI) in leather after pre-ageing 24h/80°C. Detection limit ISO 10195-2018: 3 ppm Cr(VI). Fatl.I- sulfated vegetable. Fatl.II – sulfated vegetable

In particular, the use of products manufactured according to the PULCRA Protected Fatliquoring Concept® has advantages not only in suppressing the formation of Cr(VI) in leather, but also in other aging phenomena such as yellowing, odor or premature deterioration of mechanical strength.

For the prevention of Cr(VI) formation please follow the Leather Working Group "Guidance for Tanners on Cr(VI) prevention". For more specific information, feel free to contact your local PULCRA Chemicals technical service team for further advice on this topic.

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