

## An approach towards redefining water quality parameters for leather industry Part 1. Effect of hardness and chlorides in water

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Received 23 April 2009; Accepted 11 March 2010

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### ABSTRACT

The growth of the leather industry in last few decades has been spectacular. The industry is however highly water intensive. Water is the medium currently employed by the leather industry for the conversion of raw hides and skins to leathers. There are tolerance limits for hardness and chlorides in water for use in various operations of leather processing. These limits were designed keeping in view the auxiliaries and chemicals that were available at a particular period of time. Significant changes have taken place in the auxiliaries and chemicals front resulting in enhanced stability and fastness characteristics for various process conditions. Hence it is necessary to assess and review the quality requirements of water for leather making at present. An attempt has been made to study the various water quality parameters that would influence the chemical uptake and properties of the leather. Water quality parameters particularly hardness and chlorides level were examined individually and effect of hardness and chlorides on soaking liming and chrome tanning were studied in this investigation. Some interesting results have emerged based on the studies carried out. The influence of water quality on the physicochemical characteristics of the leather in pretanning and tanning is reported in this paper. The influence of hardness on soaking, liming and chrome tanning were studied individually. Various levels of hardness water from 500 to 20,000 ppm is used in the unit process of leather manufacture to study the effect and the impact of degree of hardness. It is believed the study would form basis for revision of standards on water quality requirements for leather making and there by minimizing competition with domestic sector for fresh water. In other words change in water quality requirements would help sustainable growth of the industry, as alternate sources can be used for leather processing.

*Keywords:* Tannery; Saline water; Hardness; Leather; Water

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