

THE PROCESS OF DEGREASING LEATHER USING A NEW DEGREASING AGENT

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Abstract: This article introduces a new degreasing agent for the leather industry, which is derived from gasoline, a by-product. Based on initial research results, the possibility of using this agent in the degreasing process of leather has been confirmed.

Keywords: degreasing process, gasoline, kerosene, surface-active substances, lambskin, sheepskin.

It is well known that the processes of obtaining leather from animal hides are complex, involving various chemical substances, some of which are toxic and most of which are imported products. This situation calls for a reconsideration of the technological processes in leather production from ecological, technological, and economic perspectives.

To find new sources of chemical reagents used in leather production, it is necessary to use not complex agents but by-products, such as industrial waste. Utilizing these by-products not only reduces ecological issues to some extent but also ensures economic efficiency.

Degreasing is one of the key processes in the leather industry, especially for hides that contain a large amount of fat. When processing fine wool sheep hides, technologists aim to ensure that residual fat does not exceed 5%. However, achieving this result is often difficult. Soaps are soft and safe analogs but are not effective. Solvents and enzymes are also widely used but are expensive[1-3].

One such by-product is gasoline, which is usually obtained from gas bottles after they are empty, and it is recommended to dispose of it in open fields or deserts. The word "gasoline" comes from the French "gazoline," meaning gas, and the Latin "oleum," meaning oil [4,5]. Gasoline is a mixture of saturated hydrocarbons in liquid form, which is obtained by refining natural petroleum or separating industrial gases. It is used as fuel for carburetor engines, as well as a solvent for resins, oils, and ether oils.

Карбюратор двигателлари учун ёқилғи (газ, бензин), смола, ёғ ва эфир мойлари учун эритувчи сифатида қўлланади.

Газолиннинг мазкур хоссасидан келиб чиқиб, терини қайта ишлашнинг ёғсизлантириш жараёнида ушбу препаратдан фойдаланиш мақсад қилиб белгиланди.

Based on this property of gasoline, its use in the degreasing process of leather was considered. It should be noted that after a gas cylinder is used up, 2-5 liters of condensate or gasoline can be collected. Often, this liquid gas is discarded. Reusing it for technical purposes offers both ecological and economic benefits.

In initial research, the degreasing process was conducted solely with gasoline. Before conducting the degreasing process, sheepskin, specifically the pelt, was subjected to a

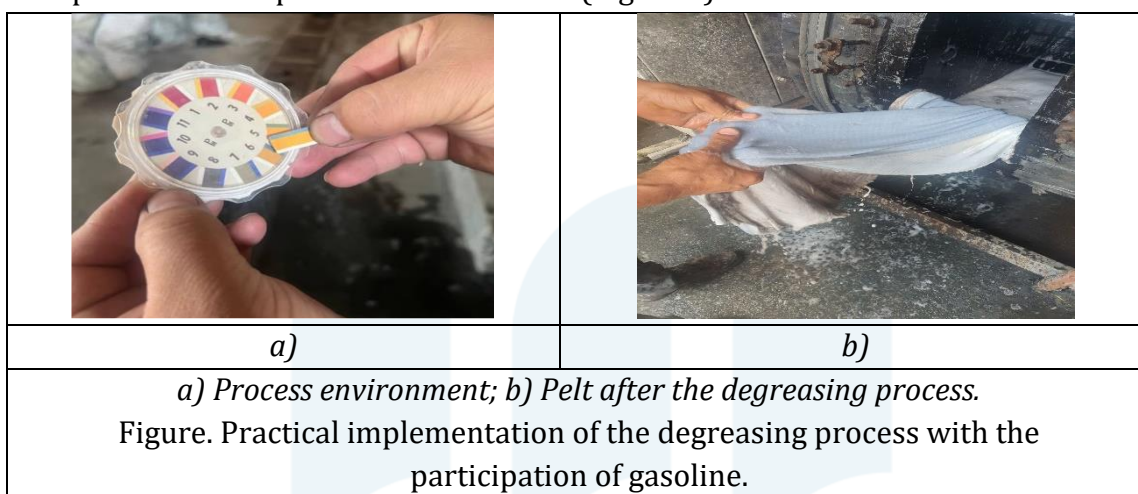
degreasing and defatting process. The main parameters of the degreasing process are shown in the table below:

Table

Main Parameters of the Degreasing Process

Process Name	Temperature (°C)	Duration (hours)	Reagent Concentration (L)
Degreasing	18	1.2	Gasoline - 4 L

For experimental trials, sheepskin, specifically the leather used as lining, was selected. To ensure the removal of non-bound fat substances from the pelt, it was treated with gasoline, and the skins were mechanically agitated for 20 minutes. Then, the degreasing process continued for another hour, with the leather being agitated every 15 minutes for 5 minutes each. The pH level of the process was set to 5.5 (Figure a).



The preliminary results of the experiment showed that gasoline has degreasing properties and does not require the use of water in this process. Since gasoline is a by-product, it is not considered expensive, and its use for technical purposes prevents it from being released into the environment. However, the results also indicated that the degreasing effect, in terms of organoleptic evaluation, was not very high. This suggests that gasoline should not be used alone, but rather in a composition. It should be noted that using it in a composition not only reduces water consumption in the technology but also decreases the consumption of imported surface-active substances and eliminates the need for kerosene in the degreasing process.

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