Volume 2, Issue 3, March 2024 **ISSN (E):** 2938-3757

METHODS OF DEGREASING SHEEP AND FUR SKINS

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Abstract
This article shows the most effective methods of degreasing fur and sheepskin, provides detailed information about the use of emulsions in degreasing, methods of using various chemical compounds. The temperature, duration and concentration of detergents are important for degreasing. Degreasing processes using strong and weak chemical methods can be considered on skins of sheep and furs. When degreasing g. k., temperature, duration and concentration of detergents Degreasing degree of sheepskin hair acetic anhydride acidified with sulfuric acid (5 ml of concentrated chemically pure sulfuric acid is added to 2 ml of acetic anhydride) hair has a green color is determined by the lack of This reaction is called cholesterol or Lieberman reaction.

Keywords: sheep skin, fur skin, emulsions, whale oil, vinyl solution, degreasing machine, sulfuric acid, acetic anhydrite.

Introduction

The following methods of degreasing are used at the enterprises of the fur and sheepskin-fur industry: emulsion and organic solvents.

Emulsion method of degreasing.

This method of degreasing has become the most widespread. It is based on the use of the detergent power of surfactants, which are subject to the following requirements: they must not adversely affect the change in the properties of the hair and skin tissue; must be detergent in hard water, i.e. in water containing large amounts of magnesium and calcium salts; have good solubility in water at room temperature. The detergent capacity of surfactants depends on the structure of the molecules. Shown is a scheme for removing impurities from the hair of the skins. Particles of grease and dirt cover the hair tightly The detergent weakens the adhesion forces between the dirt particles and the hair, resulting in a gradual watering of the surface of the dirt or grease with the detergent film. Thus, the detergent, having a high wetting capacity, has a proppant effect, and particles of grease and dirt are torn off the surface of the hair

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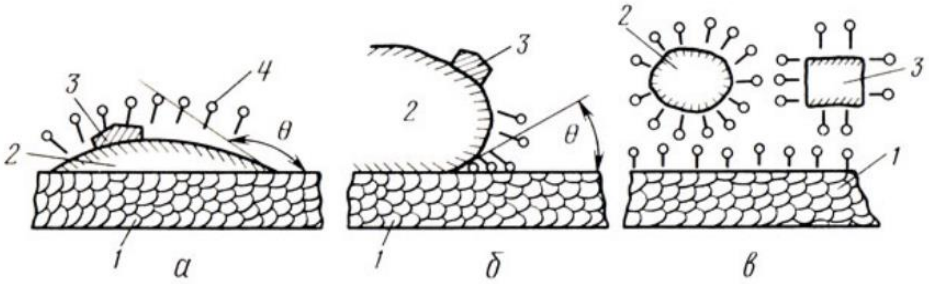
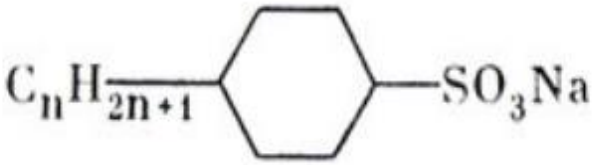


Scheme of removal of impurities from the hairline: 1 - hair; 2 - fat; 3 - dirt; 4 - surfactant

Factors influencing degreasing. Factors influencing the degreasing process include: the nature of the detergents used, temperature, duration of treatment and mechanical stress. At present, a large number of various synthetic detergents are used in the fur industry, which have completely replaced the soaps previously used for degreasing. Soaps are sodium and potassium salts of higher fatty acids. Animal and vegetable fats are used to make soap. Sodium salts of fatty acids are solid soaps, while potassium salts are liquid soaps. Soaps in an alkaline environment have a particularly good detergent ability, so a small amount of sodium carbonate is added to the solution during degreasing. In the fur industry, synthetic detergents are widely used, which have the following advantages over soaps: they have good detergent ability not only in an alkaline environment, but also in a neutral one, which is very important, since the use of an alkaline medium for processing skins is undesirable; easier to wash off hair and skin tissue; Resistant in hard water. All currently produced detergents can be divided into three groups depending on their biodegradability: biodegradable substances (the amount of biodegradable substance is 85% or more); moderately biodegradable substances (70-85%); When choosing detergents, it is necessary to remember that used working solutions in some cases clog wastewater, the purification of which is associated with great difficulties. In this regard, for example, it is not recommended to use a detergent such as OP-10, which is biologically difficult to decompose. Of the large number of synthetic detergents in the fur and sheepskin-fur industry, the following are used: washing paste "Novosti", syntanol DS, syntanol DT-308. Surfactants used in fur treatment should be easily removed from the hair and skin tissue when washed with water, should not have a negative effect on subsequent processes, and should not greatly degrease the leather fabric. In addition, they should be highly soluble in water and free of unpleasant odors. Washing paste "Novosti" is a product of processing of fatty alcohols obtained during the complex processing of sperm whale fat. The paste is creamy in color and dissolves well in water. Structural formula $CH3-(CH2)_n-OSO3Na$, n ranges from 9-17. Syntanol DS is a polyethylene glycol ether derived from synthetic alcohols of the C10-C18 fraction treated with ethylene oxide. The structural formula is R-O(CH2-CH2O)n H, n is equal to 10-12 on average, R is an alkyl residue containing 10-18 carbon atoms. Syntanol DS is a clear, glycerin-like liquid with a light yellow color. The product has good wetting properties. Syntanol DT-308 is produced on the basis of synthetic fatty alcohols of the C10-C13 fraction. In general, the formula is as follows: CnH2n+1(CH2CH2O)mH, where n is 10-13, m is 8. The product has a good detergent and wetting effect. Externally, it is a clear, slightly colored liquid without mechanical impurities. The biodegradability of the drug is 87%, it belongs to group 1 of biodegradable substances. It is non-toxic and corrosive.

Sulfonols (NP-3, NP-1, B) are a mixture of sodium salts of alkylbenzene sulfonic acids.



In addition to these detergents, the chemical industry produces many others. Recently, imported detergents have begun to be used: Peltsvashmittel - a universal detergent, Peltsvashmittel VNL - a detergent containing a solvent and recommended for especially greasy sheepskins, Syntapon SR - a product that is stable in hard water and is used in washing and degreasing fur sheepskins.

The use of this or that product depends on the fat content of the fur skin and its characteristics. Often, several detergents are used at the same time for degreasing. The amount and choice of detergent are determined on the basis of practical experience and scientific research.

An increase in temperature increases the formation of foam and thus increases the detergent capacity of the reagents used. The fatty substances contained in the hair melt at a temperature of 35-40°C, the process at a temperature of 40°C provides a good degreasing effect. Higher temperatures, especially when using alkaline solutions, can cause the hair's bond to the skin tissue to weaken. Thus, highly fattened raw materials are usually degreased at 40°C, and less fat raw materials are degreased at 30°C.

The duration of treatment is set at 40-60 minutes at the optimal temperature and concentration of detergents. Keeping the hides in the solution for a longer period of time can cause the foaming to stop, and the fat particles can break away from the detergent particles and stick to the hair again.

With vigorous mixing, the fat is removed from the surface of the hair more quickly. In addition, the risk of back-settling of contaminants is reduced. In this regard, it is advisable to use rotating equipment for degreasing.

The process is greatly influenced by the squeezing of skins on a flesh machine with blunt knives. Studies have shown that alternating the processing of hides in a detergent solution followed by mechanical squeezing on machines gives very good results.

Practical degreasing. Degreasing of raw materials is carried out depending on its fat content. It is enough to process low-fat skins for 40 minutes in a detergent solution at a temperature of 30-35°C and constant stirring. After degreasing, the skins are pressed and sent to the next processes. When dressing sheepskin fur, the washing and degreasing process consists of a number of operations: first washing, hair spinning, hair cutting, skinning, degreasing, first washing, second washing, spinning.

The first and second washing is carried out at Zh. K. = 10 for 20 minutes at a temperature of 42°C with the use of washing paste "Novosti". Sometimes formalin is added to the solution. Very often, waste substances are used to wash fur sheepskins. Spinning on the hair after washing is carried out on a machine MM2-47 with blunt knives. Degreasing is carried out in longboats at a temperature of 40°C for 60 minutes. Depending on the oiliness and dirtiness of

the hair, two or three cycles of treatments are carried out, while 70% of the fats are removed. After degreasing, the hair of the skins becomes crumbly, easily and evenly colored. However, this degreasing has a significant drawback: it takes too long, which is due to the need for a large number of loading and unloading of raw materials. This significantly lengthens the production cycle.

The fact is that during washing and degreasing, the skins are loaded into longboats in small batches, and they are extracted only one by one. This is explained by the fact that the mechanical removal of fat on the MM2-47 machine is better if the skin has not yet cooled down and has a temperature of about 40 ° C. During such processing, workers are forced to throw heavy loads (one skin taken out of the longboat weighs about 15 kg). Therefore, in order to facilitate the work of workers and intensify the soaking and degreasing processes, it is necessary to organize individual processing of raw materials. For this purpose, new designs of washing and degreasing devices are being developed, in which washing, degreasing and squeezing of hides are carried out sequentially.

In order to reduce the amount of water required for the processes and to use surfactants more economically, it is recommended to use used detergent solutions, especially when processing fur and fur sheepskin.

Degreasing with organic solvents

Degreasing with organic solvents consists of treating the semi-finished product with various solvents that extract fat. Such solvents include gasoline, turpentine, mineral spirits, dichloroethane, carbon chloride, etc. When using solvents, it should be borne in mind that they usually completely remove the protective fatty coating from the hairline, which, if not observed, can lead to a deterioration in its appearance, loss of strength and elasticity. In addition, many organic solvents are toxic and explosive. At the same time, when using them, hair flow is excluded and good degreasing of the skin tissue is ensured.

Degreasing with organic solvents is widely used in the production of fur sheepskin. Depending on the available equipment, degreasing is carried out in different ways. If gasoline is used for degreasing, the hides are treated for 2 hours, then dried to remove the gasoline, and the mixture of gasoline and fat is distilled into the distillation department. The use of gasoline is flammable, so the units should be located outside the main production building, which makes it difficult to organize a production line.

Treatment of hides with carbon chloride is carried out in special devices, in which pressing and drying are carried out without unloading the semi-finished product. This method is inconvenient because workers have to work directly with the toxic solvent.

Recently, tetrachloroethylene CH2Cl2=CH2Cl2, trichloroethylene and freon-113 have been used for degreasing fur and fur sheepskin. These solvents are non-toxic, so the raw materials can be processed directly in the production room.

Good results are given by degreasing sheepskin in a special device. The apparatus consists of a body and a drum, into which the hides are loaded and the solvent is supplied. In addition, the unit has a solvent storage tank, a dirt trap and a filter for solvent reuse. The device is equipped with an automatic and manual control system. The drum is hermetically sealed with a tight-

fitting hatch. However, when using a device for degreasing sheepskin, it is necessary to increase its productivity and organize mechanized loading and unloading of raw materials. Currently, only 150 kg of fur sheepskins can be loaded into the machine at a time.

General view of the degreasing machine

The technology of degreasing hides recommended for implementation provides for the process to be carried out at a temperature of 20°C for 8-12 minutes after soaking and washing. Then squeezing, drying at a temperature of 50°C and ventilation are carried out. The total duration of all processes is about 50 minutes. At the same time, the quality of the semi-finished product is better than the quality of the semi-finished product defatted using the emulsion method. The use of organic solvents can significantly shorten the production cycle, increase product yield and reduce wastewater pollution. On the basis of organic solvents (tetrachloroethylene, trichloroethylene), a method of degreasing dyed sheepskin has also been developed.

Degreasing control

During degreasing, the cooling, temperature, duration and concentration of detergents are monitored. The degree of degreasing of the sheepskin fur coat is determined by the absence of green hair coloration under the action of acetic anhydride acidified with sulfuric acid (5 ml of concentrated chemically pure sulfuric acid is added to 2 ml of acetic anhydride). This reaction is called the cholesterol or Liebermann reaction.

REFERENCES

1. I.P.Strahov and others. "Chemistry and technology skins and mecha". Moscow Legprombytizdat, 1985. 495 p. (In Russian).
2. A.F. Kostylev, S.A. Kasparyants, Yu G. Shkutov. "Commodity Science and technology of primary processing of leather raw materials". Moscow Legprombytizdat. 1988. 396 p.
3. G.I.Nikifirov. ≪Procurement and Commodity Science of Leather raw materials, fur coats and fur sheepskins≫. Moscow, Ekonomika Publ., 1982. 166 p. (In Russian).

4. M.J.Scandinavia, F.Sh.Sharaforov, D.Y.Hamrokulov. "Korako' linguistics." Tashkent, Teacher, 1976. 215 b.
5. A.D.Pereverzeva. "Commodity Production of Fur and Fur Raw Materials" Moscow, Ekonomika Publ., 1982. 286 p. (In Russian).
6. Y.S.Etkin. "Commodity production of fur raw materials and finished products." Moscow, Legprombytizdat Publ., 1990. 364 p. (In Russian).
7. E.V. Gaevoy. ≪Processing of raw leather, fur and fur coat sheepskins at meat processing plants≫. Moscow, Food Industry Publ., 1977. 194 p. (in Russian).
8. S.P.Bondarenko. ≪Dressing and manufacture of products from hides sheep and goats≫. Moscow ≪Ast - Stalker≫, 2003. 233 p. (In Russian).

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