

## EFFECT PARAMETERS FOR WASHING WOOL SURFACE TENSION OF THE WASHING SOLUTION

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**Abstract:** We've found that the most influential factor in the wool washing process is the concentration of detergent. Concentrations of 1,5 g/dm<sup>3</sup> is enough to identify the washing action of detergent Sles 70.

Search of the rational parameters of wool washing is an actual task of the primary wool clearing. During wet cleaning the organic and mineral dirt are being removed from the wool. Upon completing the classic process of wet cleaning of the wool fiber they use the following proportions: 100-600 parts of water to one part of dirty wool (hydraulic kit). Output of the dry scoured wool is 40-60% of the original mass. Classic soap-soda washing solution has alkaline environment.

We've studied process of fine fleece wool cleaning at the stage of wool washing. Purpose of this study is studying ways of reducing the amount of water that is used during cleaning, replacement of classic washing solution with the solution with a neutral pH environment, and search of rational parameters of wool washing. Washing solution was prepared by dissolving of anionic detergent Sodium laureth sulfate (Sles 70).

We have investigated the effect of the concentration of detergent in the washing solution, hydraulic kit, temperature and washing duration on the surface tension of the washing waste solution obtained after wool washing. We determined the effect of concentration Sles 70 in the washing solution in range 0,5–3,5 g/dm<sup>3</sup>, hydraulic kit 10–50, temperature 20–50 °C and duration of washing 2–32 minutes.

Search of the rational parameters of wool washing to reduce the use of detergent, to reduce ratio of water: wool (hydraulic kit) and to save material and energy resources - this is an actual task of the primary wool clearing.

It was determined that concentration of 1,5 g/dm<sup>3</sup> would be enough to identify washing effect of detergent Sles 70. Use of the specified concentration of the detergent will reduce the alkalic impact on the wool, and will help to efficiently use the detergent and water while washing wool in the primary wool cleaning.

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**Key words:** wool, washing, surface tension, washing solution, ranking