

# UNITED STATES PATENT OFFICE

2,430,499

## COMPOSITION CONTAINING POLYVINYL ALCOHOL AND LAURYL PYRIDINIUM CHLORIDE

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Our invention relates to the manufacture of filaments and particularly yarns from water solutions of polyvinyl alcohol. Heretofore in the manufacture of such yarns, it has been found that they do not have the requisite "feel" but tend to be harsh and stiff and that fabrics made from them do not drape satisfactorily. Heretofore, glycerin and ethylene glycol have been added in an attempt to improve these qualities of the yarn, but these materials are unsatisfactory because they reduce the tensile strength substantially. We have discovered that lauryl pyridinium chloride is effective to improve the feed of polyvinyl alcohol yarn and the drape of cloth made from it, even when employed in quantities as small as 0.25% on the amount of polyvinyl alcohol in the solution. The nature of lauryl pyridinium chloride and similar salts is disclosed in United States Patent No. 2,104,728, January 11, 1938, to Bertsch & Stober.

In the experimental search to find some means of improving the feel of polyvinyl alcohol filaments, various anionic and cationic surface active substances were tried and it was found that none of the anionic substances had an appreciable effect, but that the substance mentioned materially improves the quality of the yarn or cloth. Since it is cationic in nature it was thought that cationic surface active agents in general would be effective. However, we were unable to find any other cationic substances than the one mentioned which was effective and conclude that the favorable results obtained were due to peculiar qualities of the material, rather than to its cationic nature.

In practicing our invention we make a solution of polyvinyl alcohol in water, usually about 25%

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polyvinyl alcohol and 75% water and add to the solution from 0.25 to 2.50% of lauryl pyridinium chloride based on the weight of polyvinyl alcohol and then form the solution into filaments in the manner customary in the manufacture of polyvinyl alcohol yarn.

We have further found that the modifying material as purchased in the open market may contain some free amine which tends to injure any copper fittings in the equipment. Therefore, it is advisable to neutralize such free amine by the addition of small quantities of sulfuric acid, hydrochloric or other suitable acids or acid salts.

We claim:

- 15 1. A filament forming solution comprising an aqueous solution of polyvinyl alcohol and a small quantity of lauryl pyridinium chloride, the amount of the chloride being from 0.25 to 2.50 per cent by weight of the polyvinyl alcohol.
- 20 2. A filament comprising polyvinyl alcohol and a small quantity of lauryl pyridinium chloride, the amount of chloride being from 0.25 to 2.50 per cent by weight of the polyvinyl alcohol.

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### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
2,072,302	Herrmann et al. ....	Mar. 2, 1937
2,104,728	Bertsch et al. ....	Jan. 11, 1938