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MERCERIZING

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The invention has for its object the promotion of the wetting capacity of the caustic soda solution used for mercerizing so that the cotton fabrics and yarns immersed in the same are easily moistened.

As a rule cotton is subjected before the mercerizing process to a preliminary treatment consisting f. i. in boiling the same with diluted caustic soda. This boiling process, however, shows various drawbacks, amongst others a substantial loss of weight takes place and it has been tried therefore to avoid this preliminary treatment before the mercerization. In this case, however, a peculiar difficulty is met with: the wetting capacity of the strong caustic soda solution for dry cotton goods or yarns is exceedingly small, so that they remain floating on the liquid by which the treatment is very much impeded.

The invention is based on the observation that the difficulty in question may be removed by adding to the solution a mixture of a phenol, e. g. cresol with an univalent saturated aliphatic or aromatic alcohol. If one of the said substances is applied per se it is found that the dry cotton goods and yarns are hardly moistened by the mercerizing lye notwithstanding the fact that the surface tension of the lye is considerably decreased by adding the same. If however a mixture of a phenol and one of the above mentioned alcohols in a certain proportion is added the inventor found that the solution prepared in this way fully penetrates the material within a few seconds, so that the same sinks to the bottom.

The number of alcohols adapted for the process is rather restricted because the alcohol must be soluble in the mercerizing bath and moreover must not be so volatile that the concentration quickly decreases by evaporation. A very suitable alcohol for the purpose is benzyl alcohol.

Besides the choice of the substances to be used the proportion in which they are mixed is also very important. It was found that when the phenol and the alcohol are mixed in a definite proportion the desired effect is obtained in a high degree; if the ratio of the constitutents is changed in one or the other direction the result will be much less favourable.

It has already been proposed to add cresol to the mercerizing bath in order to obtain a better wetting of dry cotton fabrics or yarns; the result obtained by this addition, however, is very unsatisfactory. On the other hand it was not known that the purpose in view could be fully attained by adding to the mercerizing bath a mixture of a phenol for example, phenol or cresol, and an aliphatic or aromatic univalent alcohol in a definite proportion.

Examples

18 kilograms of technical cresol are mixed with 2 kilograms technical benzylalcohol; the mixture is dissolved with continuous stirring in 1000 litres of a caustic soda solution of 30–35° Bé.

The lye so prepared has the property of immediately and fully wetting cotton goods or yarns, so that the latter may be mercerized without any preliminary treatment. In this way the following advantages are obtained:

1. The preliminary boiling process now being omitted, it is possible to maintain the natural color of the material and moreover the loss in weight by boiling is avoided;

2. No dilution of the mercerizing bath by liquids remaining in the cotton after the preliminary treatment will take place;

3. The mercerization may be effected in this way with a larger distance of the tension rolls by which a profit in length is obtained.

It is of course not necessary to prepare the above mentioned mixture before the addition to the mercerizing bath but the object of the invention is also reached by adding the constituents separately.

I claim:—

1. A composition for increasing the wetting capacity of caustic soda solution for cotton fabrics and yarns consisting of a mixture of one or more phenols and one or more univalent saturated aliphatic or aromatic alcohols soluble in said solution.

2. A composition for increasing the wetting capacity of caustic soda solution for cotton fabrics and yarns consisting of a mixture of cresol and benzylalcohol.

3. A composition for increasing the wetting capacity of caustic soda solution for cotton fabrics and yarns consisting of a mixture of 90 parts in weight of cresol and 10 parts in weight of benzylalcohol.

4. Mercerizing bath consisting of caustic soda solution to which one or more phenols and one or more univalent saturated aliphatic or aromatic alcohols that are soluble in said solution have been added.

5. A process for mercerizing cotton fabrics and yarns consisting in subjecting the same to the action of caustic soda solution containing in solution a proportion of one or more phenols and one or more univalent saturated aliphatic or aromatic alcohols that are soluble in said solution.

6. In the alkaline treatment of natural and artificial cellulosic material, the process which comprises treating said cellulosic material in an alkaline bath containing benzyl alcohol and cresylic acid.

7. A process for mercerizing cotton fabrics and yarns comprising subjecting the same to contact with a solution of caustic soda containing cresol and benzylalcohol.

8. A process for mercerizing cotton fabrics and yarns comprising wetting the same in a solution of caustic soda containing 90 parts cresol and 10 parts benzylalcohol.

9. Mercerizing bath consisting of caustic soda solution to which cresol and benzylalcohol have been added.

10. Mercerizing bath consisting of caustic soda solution to which 90 parts of cresol and 10 parts of benzylalcohol have been added.

In testimony whereof I affix my signature.

Dr. CORNELIS WARNARDUS ZAHN.