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PROCESS FOR IMPROVING TEXTILE MATERIALS

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The present invention relates to a process for improving textile materials by treating them with esters of chlorocarbonic acid.

We have found that fibrous materials of a great variety of kinds, particularly cellulosic materials, can be improved and particularly an excellent water-repelling action can be imparted to them by treating them with esters of chlorocarbonic acid. Especially those derived from alcohols containing a greater number of say at least 4 carbon atoms are suitable for this purpose, for example the following compounds: chlorocarbonic esters of butyl, amyl, hexyl, cyclohexyl, or benzyl alcohol and the like, and more particularly the esters of high molecular aliphatic alcohols, for example those corresponding to the acids contained in natural oils, fats or waxes. For example the esters of octyl, dodecyl, myristyl, cetyl, octodecyl or oleyl alcohol, also of octodecandiol, montanol (derived from montanic acids) or of alcohols obtainable by the oxidation of high molecular aliphatic hydrocarbons may be used. Substituents such as halogen atoms, hydroxy, ether, ester or nitro groups may also be present in the molecule.

The process may be employed for the improvement for example of cotton, artificial silks, linen, wool and mixed fabrics. The process may be applied at any stage of the working up of these materials.

For example the said esters of chlorocarbonic acid are dissolved or dispersed in organic solvents such as carbon tetrachloride, benzine, benzene, tetrahydronaphthalene and the like, or in water and the textile material is handled in this solution or dispersion for some time. In cases in which the fibrous material may be injured by the action of the hydrogen chloride which is formed by the reaction of the chlorocarbonic ester with the fibrous material it is advantageous to add agents capable of binding acids. For example may be employed ammonia, sodium carbonate solution, amines, pyridine and the like. Generally speaking it is advantageous to employ elevated temperatures, for example of from 50° to 100° C. The textile material treated is then squeezed and dried at normal or elevated temperature for example up to 100° C. In some cases it is advantageous to carry out the drying in vacuo. In this case organic solvents employed in this process may be recovered.

The textile materials treated possess a good water-repelling action which is not diminished by

subsequent washing; often the materials have a very soft touch.

The following example will further illustrate the nature of this invention but the invention is not restricted to this example. The parts are by weight.

Example

Dyed cotton tweel is treated with a solution of 5 parts of chlorocarbonic octodecyl ester and 1 part of pyridine in 1000 parts of carbon tetrachloride and dried for an hour at 90° C. The material is rendered excellently impermeable to water by this treatment. The effect is not destroyed by subsequent washing.

What we claim is:—

1. The process for improving the water-repelling of textile materials which consists of treating said materials with a chlorocarbonic ester of an alcohol containing at least 4 carbon atoms and then drying the treated textile materials at a temperature sufficient to cause a reaction to occur between said textile materials and said ester.

2. The process for improving the water-repelling of textile materials which consists of treating said materials with a chlorocarbonic ester of an aliphatic alcohol corresponding to the fatty acids contained in naturally occurring fatty substances and then drying the treated textile materials at a temperature sufficient to cause a reaction to occur between said textile materials and said ester.

3. The process for improving the water-repelling of textile materials which consists of treating said materials with a chlorocarbonic ester of an aliphatic alcohol containing at least 4 carbon atoms in the presence of a diluent and a substance capable of binding any acid formed by the reaction between the textile materials and the chlorocarbonic ester at a temperature sufficient to cause a reaction to occur between said textile materials and said ester.

4. Water-repellent textile materials consisting of the reaction product of a textile material and a chlorocarbonic ester of an alcohol containing at least 4 carbon atoms.

5. Water-repellent textile materials consisting of the reaction product of a textile material and a chlorocarbonic ester of an aliphatic alcohol corresponding to the fatty acids contained in naturally occurring fatty substances.

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