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MEANS FOR TREATING TEXTILES

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This invention relates to means for treating textiles and refers more particularly to a wetting or spraying composition which is applied to textile yarns or fabrics in order to make them more amenable to further treatments.

It was found most desirable to spray or moisten textile fabrics and, particularly, textile yarns prior to the weaving, spinning, twisting, doubling or knitting operations with a solution containing ingredients which adhere to the fibers of the yarn and which have the effect of removing kinks out of the yarn, increasing its strength and flexibility and protecting it from excessive drying, mildew and molding. This preliminary treatment of the yarn serves, consequently, the purpose of preparing the yarn for further operations and improving those qualities of yarn which are most useful in the course of these operations. It is among the principal objects of the present invention to provide a composition which is most suitable for this purpose and through the use of which the best possible results may be attained.

Other objects of the present invention will become apparent in the course of the following specification.

The objects of the present invention may be realized, broadly, through the use of a mixture containing as its main component parts a wetting agent or similar penetrant harmless to all textiles, and an acid and/or an alkali fungicide having wetting properties, along with a lubricant and a dye, and with the further possible addition of staying-in agents, solvents, aromatics and softening agents.

As the wetting agent, it was found advantageous to employ sulfonated esters of aliphatic dibasic acids, particularly in the form of their alkali forming metal salts, such as sodium salts, salts with ammonia or other amine bases or salts of alkaloids and other organic basis capable of salts formation with the sulphonic group. Sodium alkyl naphthalene sulphonate or sulfonated esters of di-carboxylic acids were found to be most suitable as wetting agents.

It was found that various useful properties of these wetting agents are increased to a considerable extent when the agents are mixed with acid and/or alkali fungicides having wetting properties, particularly thymol derivatives such as the well-known "Thymolin", esters of hydroxybenzoic acid, chlorinated phenol and parachlor meta-cresol. An acid fungicide, such as parachlor meta-cresol, or an alkali fungicide, such as a parahydroxybenzoic acid ester, may be mixed separately with the wetting agent, or a single mixture

may contain both acid and alkali fungicides in addition to the wetting agent. The effect of the fungicide upon textile fibers facilitates the action of the wetting agent, and a yarn treated by a mixture of the two agents is stronger and more flexible than a yarn treated solely by the wetting agent.

It was found most desirable to add a lubricant to the mixture of fungicides and wetting agents. A sulphonated vegetable or mineral oil, such as a so-called spinning oil, which is a turkey-red oil commonly used in the textile industry, or sulphonated castor oil, was found to be a suitable lubricant, which mixes easily with the above described wetting agents and fungicides and facilitates their action.

In many instances, the general treatment of the yarn is considerably improved if a staying-in agent, i. e. a suitable hygroscopic agent, such as any glycerine derivative, for instance, "sorban," which is a sugar derivative or ethylene glycol, is added to the mixture.

It is advantageous, although not necessary, to add a suitable dye, such as a coal tar dye, to the mixture in order to remove any original coloring remaining in the yarn.

Preferably, the wetting agents and the fungicides are used in conjunction with an alcohol, as solvent, for instance, methylalcohol.

An amino condensation product may be added as a softening agent to the mixture to soften the fibers and improve their appearance and feeling. It is also advisable to use aromatics in order not to leave any unpleasant odors in the textile fibers.

The ingredients of the mixture may be used in different proportions. From 10 to 75 parts by weight of a sulfonated ester of an aliphatic dibasic acid may be used in conjunction with 30 to 150 parts by weight of butyl alcohol to constitute the wetting agent. From 1 to 15 parts by weight of an acid fungicide and/or an alkali fungicide, such as parachlor meta-cresol, a thymol derivative, or an ester of hydroxybenzoic acid may be mixed with the stated amounts of the wetting agent. This mixture may receive from 10 to 70 parts by weight of ethylene glycol, from 1 to 40 parts by weight of the lubricating oil and from 10 to 30 parts by weight of the softening agent.

Because of the large number of mixtures which can be prepared according to the present invention, only a few are illustrated in the following specific examples, it being understood that these are typical examples of the large number of preparations included in the present invention

and that the invention is not limited to such illustrations.

Example 1

10 kilograms of a 25% concentration of an ester of a sulphonated bi-carboxylic acid sold on the market under the registered trade-name "Aerosol O T Clear" in butyl alcohol are mixed with 9 kilograms of methyl alcohol. 0.25 kilogram of parachlor metacresol, 0.25 kilogram of oil and 0.025 kilogram of a thymol derivative are added to the mixture, along with 0.005 kilogram of a coal tar dye and 0.06 kilogram of an aromatic.

The mixture may be preserved in 50 to 150 liter containers for long periods of time. From 1% to 10% of the mixture are used in an aqueous solution for spraying the yarn for a few seconds. The percentage of the mixture in water depends to a great extent upon the quality and texture of the textile fibers and the subsequent use to which they are intended.

Example 2

7 kilograms of a 25% concentration of the said "Aerosol O T Clear" are mixed with 2.5 kilograms of a 50% concentration of "Aerosol O T Clear" in butyl alcohol and are added to 10 kilograms of methyl alcohol. 3 kilograms of ethylene glycol, 0.25 kilogram of parachlor metacresol, 0.2 kilogram of oil and 0.06 kilogram of a thymol derivative are added to the mixture, in addition to 0.005 kilogram of a coal tar dye and 0.06 kilogram of an aromatic.

The mixture is sprayed upon a textile yarn in an aqueous solution of 1 to 5%.

Example 3

8 kilograms of a 50% concentration of "Aerosol O T Clear" in butyl alcohol are mixed with 5 kilograms of methyl alcohol and 4 kilograms of sulphonated castor oil. 0.5 kilogram of triethanolamine, 0.6 kilogram of a thymol derivative, 0.006 kilogram of a coal tar dye and 0.015 kilogram of an aromatic are added to the mixture. 0.5 kilogram of an amino condensation product known under the trade-mark "Soromine A F Paste", a softening agent, are also added to the mixture.

From 1% to 3% of the mixture are used in an aqueous solution.

Example 4

14 kilograms of a 50% concentration of "Aerosol O T Clear" in butyl alcohol are mixed with 11 kilograms of methyl alcohol and 7 kilograms of ethylene glycol, 5 kilograms of sulphonated castor oil, 2.2 kilograms of a thymol derivative, 0.04 kilogram of an aromatic (lav-

ender) and 0.008 kilogram of a coal tar dye are added to the mixture.

The mixture is used in an aqueous solution of 1% to 10%.

Example 5

15 kilograms of sodium alkyl naphthalene sulphonate are mixed with 12 kilograms of ethylene glycol, 10 kilograms of methyl alcohol, 6 kilograms of sulphonated castor oil, 2 kilograms of parachlor metacresol, 0.4 kilograms of an ester of hydroxybenzoic acid and chlorinated phenol and 0.01 kilogram of a coal tar dye. The mixture is dissolved for use in 99% to 90% of water.

Example 6

7.2 kilograms of a 25% concentration of "Aerosol O T Clear" in butyl alcohol are mixed with 6 kilograms of methyl alcohol, and 0.15 kilogram of parachlor metacresol, 0.004 kilogram of a coal tar dye, 0.15 kilogram of Turkey-red oil, 0.3 kilogram of a thymol derivative and 0.02 kilogram of a natural or synthetic aromatic are added to the mixture, the final mixture being used in an aqueous solution of 1% to 10%.

Example 7

12 kilograms of a 50% concentration of "Aerosol O T Clear" in butyl alcohol are mixed with 3 kilograms of ethylene glycol and 2 kilograms of sulphonated castor oil, and then 0.5 kilogram of parachlor metacresol, 0.006 kilogram of coal tar dye, 0.5 kilogram of triethanolamine, 0.25 kilogram of a thymol derivative and 0.05 kilogram of soluble rose are added to the mixture.

The mixture is used in an aqueous solution of 1% to 10%.

It is to be understood that the invention is not intended to be restricted to any particular example, composition or proportions, as the same may be modified in various particulars or be applied in many varied relations without departing from the spirit or scope of the claimed invention.

What is claimed is:

1. A composition for the preliminary treatment of textile fibers, comprising, in combination, 10 to 75 parts by weight of a sulfonated ester of an aliphatic dibasic acid, 30 to 150 parts by weight of butyl alcohol and 1 to 15 parts by weight of a fungicide of the class consisting of parachlor-metacresol and parahydroxybenzoic acid esters.
2. A composition for the preliminary treatment of textile fibers, comprising, in combination 10 to 75 parts by weight of a sulfonated ester of an aliphatic dibasic acid, 30 to 150 parts by weight of butyl alcohol, 1 to 15 parts by weight of parachlor metacresol and from 1 to 40 parts by weight of a sulphonated vegetable oil.

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