United States Patent Office 3,758,269 Patented Sept. 11, 1973

3,758,269

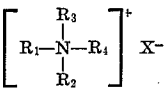
CATION DYES AND LONG CHAIN ALKYL QUATERNARY AMMONIUM SALT APPLIED TO ANIONICALLY MODIFIED NYLON IN A JUTE-BACKED CARPET

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U.S. Cl. 8—21 B 8 Claims

ABSTRACT OF THE DISCLOSURE

The staining of cationic dyeable nylon carpet face fiber by cationic dyestuffs used in dyeing jute-backing is prevented without significant loss of color yield on the jute by dyeing the jute below about 90° F. in the presence of a cationic surface active agent of the formula:



where X^- is any water-soluble anion, R_1 is an aliphatic hydrocarbon group containing at least 8 carbon atoms, R_4 is —H, $-CH_3$ or other hydrocarbon alkyl group, R_2 and R_3 are either hydrogen aliphatic hydrocarbon groups, cycloaliphatic groups or 2-hydroxy-propyl groups, and R_1, R_2, R_3 and R_4 contain a total of 16 to 45 carbon atoms.

BACKGROUND OF THE INVENTION

This invention relates to a method of dyeing jute-backed polyamide carpeting and more particularly to a method of dyeing jute with cationic or basic dyestuffs without staining the cationic dyeable polyamide in a carpet having polyamide face yarns and a jute backing.

In manufacturing some carpets the surface or pile fibers consisting of polyamide fibers, such as nylon, are tufted into a jute scrim or backing. In the styling of modern carpeting contrasting and decorative effects are obtained by blending yarns, the fibers of which have different affinities for a given type of dyestuff as well as for different classes of dyestuffs. For example, nylons of regular, reduced and increased affinities for acid dyes and cationic dyes are often blended in different patterns. In many it is necessary to dye the jute backing, especially when the jute backing will be visible through the pile. When the jute-backing is dyed with basic or cationic dyestuffs, there is a tendency for the cationic dyeable polyamides either in the form of blends or in uniformly dyeable fibers to become stained resulting in failure to obtain a white reserve or a failure to maintain the original dyed shade of the polyamide fiber. Heretofore it has not been possible to reserve or prevent the staining of cationic dyeable polyamide fibers especially when it was necessary to dye the jute to a heavy or dark shade in a jute-backed, polyamide carpet.

It is known that jute can be dyed with cationic or basic dyestuffs at low temperatures. In the regular dyeing of a cationic dyeable fiber blend with jute the cationic dyestuffs tend to dye the jute initially. As the temperature of the dyebath is raised, the cationic dyestuffs migrate to other cationic dyeable fibers present in the fiber blend. Since a normal dyeing is carried out at a temperature of 185° F. or higher practically all of the cationic dyestuffs are transferred off the jute leaving it virtually unstained or void of color. In German Patent No. 1,469,729 both polyamide yarn and jute backing are dyed simultaneously with acid and direct dyestuff at pH of 3–8 in a bath at between 40° C. and 75° C. in the presence of a leveling

agent such as a reaction product of CNCl and an aromatic amino sulfonic acid or ethoxylated fatty amines. However, this method does not permit selective dyeing of the fiber blends or result in the production of dark shades in the polyamide fibers.

One method of preventing the staining of the polyamide fibers while dyeing the jute backing is to dye the polyamide fibers and the jute-backing before tufting, but this procedure is uneconomical and does not permit suitable styling achieved by incorporating fibers having different affinities for a given type or different classes of dyestuffs.

In U.S. 3,472,607 Sapers discloses a method of dyeing synthetic polyamide carpets having jute backing at temperatures in the range of 120–180° F. by using specific leveling agents having retarding properties and buffer salts to control pH in the range of 5.5 to 7.0. Sapers prevents the jute staining of the polyamide fibers while dyeing the polyamide fibers with acid dyes by adding the specified leveling agents and buffer salts. However, the Sapers' method and dyebath preparation cannot be used to prevent the staining of the polyamide fibers with cationic or basic dyes while the cationic or basic dyes are being used in the dyeing of the jute.

In another method for preventing the jute from staining the synthetic polyamide fibers while the synthetic polyamide fibers are being dyed Yao et al. in U.S. 3,429,647 apply salts of zirconium in the presence of a nitrogen-containing base to jute containing fabrics at 100° F. to 212° F. This method is analogous to Sapers for dyeing polyamide fibers. The Yao et al. method cannot be used to dye the jute backing while preventing the staining and impregnation of the polyamide fibers with the dye. In fact Sapers and Yao et al. can be used in the dyeing of the polyamide fibers in accordance with this invention insofar as the inventions disclosed thereby are adaptable to the dyeing of the polyamide (nylon) face fibers with acid and dispersed dyestuffs in the jute when the jute is dyed.

Although certain cationic surface active agents are often employed as cationic dye leveling agents and retarders in the dyeing of cationic dyeable polyamide fibers, these conventional dyeing assistants do not perform satisfactorily in our invention. Examples of the cationic surface active agents used as dyeing assistants which do not prevent the staining of dyed nylon fibers when the jute backing of a jute-backed nylon face fiber carpet is dyed, are lauryl trimethylammonium chloride, lauryl benzyldimethyl ammonium chloride and lauryl pyridinium chloride. These cationic surface active agents are either inefficient and only slightly retard staining of the nylon fibers, or they are totally ineffective in preventing the staining of the nylon fibers with the cationic dyestuffs used for dyeing the jute backing. At concentrations which may be high enough to prevent staining of the face fiber, they hold back so much of the cationic dyestuffs that the jute cannot be satisfactorily dyed to a heavy shade. If lower concentrations of these conventional retarders are used to achieve satisfactory dyestuff exhaustion on the jute, then the face fibers are stained to an unaccetpable degree. Ethoxylated fatty amines and ethoxylated fatty amides are commonly used in the level dyeing of acid-dyeable nylon fibers; these agents are also ineffective in preventing cationic stain on the face fibers.

OBJECTS OF THE INVENTION

Accordingly, it is an object of this invention to provide a method for dyeing jute in a jute-backed polyamide containing carpet.

It is another object of this invention to provide a low temperature method for dyeing jute in a jute-backed carpet without staining the polyamide fibers.

It is still another object of this invention to provide a method and dyebath composition for the dyeing of jute

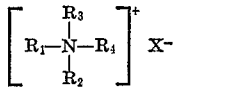
to a dark shade in a carpeting consisting of fiber blends tufted on a jute backing.

Still another object of this invention is to provide a class of cationic surface active agents or blocking agents which will permit satisfactory dyestuff exhaustion on the jute of a jute-backed textile material while preventing the staining of the textile material with the dyestuff.

These and other objects and advantages of this invention will become apparent upon consideration of the following detailed description, and the novel features thereof will be particularly pointed out hereinafter in connection with the appended claims.

SUMMARY OF THE INVENTION

We have found that in order to selectively dye the jute-backing of textile materials containing polyamide face fibers without staining the face cationic polyamide fibers, certain specified cationic surface active agents (blocking agents) block the dye sites of the face fibers and thereby prevent the staining of the face fibers when dyeing of the jute is carried out with cationic or basic dyestuffs at 90° F. or lower. The specific class of cationic surface active agents or blocking agents which we have found suitable for use in the dyeing procedures and dyebath compositions of this invention are cationic surface active agents having the formula:



where X^- is any water-soluble anion; R_1 is an aliphatic hydrocarbon chain containing at least 8 carbon atoms; R_4 is selected from the group consisting of —H, —CH_3 and other hydrocarbon alkyl groups; R_2 and R_3 are selected from the group consisting of hydrogen aliphatic hydrocarbon groups, cycloaliphatic groups and 2-hydroxypropyl groups; and R_1, R_2, R_3 and R_4 contain a total of 16 to 45 carbon atoms. The specified class of blocking agents or cationic surface active agents may be applied to the jute backed textile material either prior to dyeing the jute or may be added simultaneously with the jute dyebath composition. All face fibers, a selective group of face fibers, or none of the polyamide face fibers may have been dyed prior to the dyeing of the jute.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

One of the preferred methods of dyeing the jute of a jute-backed polyamide or nylon textile material, such as carpeting, is to first dye at least part of the polyamide or nylon face fibers of the jute-backed carpeting to a suitable shade and rinse the carpeting with water to remove extraneous chemicals followed by dyeing the jute portion of the jute-backed polyamide carpeting in a separate bath containing an acid or buffer composition to adjust the pH to about 4 to 6 at a temperature not exceeding about 90° F. and further containing from about 0.25 to about 0.50 percent (based on total fiber weight) of the specified class of blocking agents of this invention such as di-lauryl dimethylammonium chloride. The dyebath also contains a sufficient amount of cationic or basic dyestuffs to dye the jute to the desired shade. The dyeing is generally complete within 5 to 30 minutes, and the textile materials may then be treated with chemical finishing agents and/or rinsed and processed as desired.

Another preferred embodiment comprises treating the jute-backed polyamide textile material in which at least part of the face fibers have been dyed, in a bath containing at least one of the specified class of blocking agents at a concentration of about 0.25 to about 0.50 percent (based on the total fiber weight) at a pH of about 3 to 11 at 90° F. or less for about 5 to 20 minutes. After the application of the blocking agent the pH of the bath is adjusted to about 4 to 6 if necessary, and at least one cationic or basic dyestuff is added to the bath and the temperature is maintained at 90° F. or less until the jute is dyed to a suitable shade at which time the textile material is removed from the bath, rinsed with water and optionally subjected to additional treatment.

Examples of the cationic surface agents or blocking agents suitable for the purpose of this invention and covered by the generic formula cited above are di(2-ethylhexyl) amine acetate, di(2-ethylhexyl) amine hydrochloride, di(2-ethylhexyl) amine citrate, salts of di-coconut alkyl amines, salts of coconut alkyl di(2-hydroxypropyl) amines, dimethyldidecyl ammonium chloride, tricaprylmethyl ammonium chloride, di-(2-hydroxypropyl) laurylamine acetate, dimethyldilauryl ammonium methosulfate, stearyl trimethyl ammonium chloride, methyldilaurylamine acetate, dilaurylamine acetate, dimethyldilauryl ammonium chloride, dimethyldidecyl ammonium chloride, dicocodimethyl ammonium chloride, tris-(2-ethylhexyl) ammonium chloride, stearylamine acetate, dimethyldioleyl ammonium chloride, lauryltributyl ammonium chloride, decyltriethyl ammonium chloride, octyldiamyl ammonium chloride, octyldiisopropyl amine formate, laurylcyclohexylamine acetate, dimethylbutyllauryl ammonium ethosulfate, the salts of dioctyl decylamine and didecylamine, and dimethyldistearyl ammonium chloride. The cationic surface agents may be used alone or in combination with each other. A particular aliphatic hydrocarbon chain of the surface active agents may comprise a mixture of various aliphatic groups, e.g., the "coco" chain of dicocodimethyl ammonium chloride contains in addition to C_{12} other aliphatic chains such as, C_{10}, C_{14}, C_{16}, C_{18} and the like. The aliphatic chains of the blocking agents may be unsaturated as well as saturated straight-chained or branched, and may also be comprised of cycloaliphatic groups, particularly those cycloaliphatics having from 5 to 8 carbon atoms. The only limitation placed upon the aliphatic hydrocarbon groups is that R_1 must contain at least 8 carbon atoms and the total number of carbon atoms in the cationic surface active agent must be from 16 to 45 exclusive of any carbon atoms found in the water-soluble anion represented by X^- in the formula set forth above.

The water-soluble anions represented by X^- in the above formula may be chloride, methosulfate, ethosulfate, acetate, citrate, formate, sulfate, and the like. Thus, the blocking agent is generally in the form of a salt.

Since carpet construction varies widely, the relative amount of jute and cationic dyeable face fiber are also quite variable in practice. The amount of blocking agent required to prevent staining of the face fibers may be varied over a range of about 0.0–2.0 percent on the total carpet weight and preferably about 0.25–1.0 percent. It is within the scope of this invention to add other additives, such as non-ionic compounds for dispersing poorly water-soluble cationic compounds, such as tricaprylmethylammonium chloride or disocyamine acetate which do not adversely affected the utility of the invention. Even small amount amounts of the conventional retarders or dye leveling agents below the concentrations at which they hold off cationic dyes from the jute can be tolerated as solubilizers. For example, lauryltrimethylammonium chloride can be used as a solubilizer for dilauryl dimethyl ammonium chloride if the ratio of the lauryl compound to the dilauryl compound is small. It is also within the purview of one skilled in the art to add other agents or additives which will not adversely affect the practice of the present invention.

The cationic or basic dyestuff which may be used in the dyeing of the jute in the jute-backed polyamide based fiber textile composition, may be any of the cationic or basic dyes which are known to those skilled in the art. One or more cationic dyes may be used to dye the jute composition. The cationic or basic dyes are added to a jute dyebath composition having a pH about 3 to 11 and preferably of about 4 to 6. The pH of the dyebath composition is adjusted by adding an amount of acid, base or

buffer sufficient to reach the desired pH. By an amount sufficient to adjust the bath to the desired pH we mean the addition of an acid, base or a buffer solution to adjust the pH of the aqueous medium to about 3 to 11 and preferably to about 4 to about 6. The pH of the bath containing the dyestuff must be adjusted within a suitable range for the particular dye or dyes being used, and it is within the purview of one skilled in the art to adjust the pH of the medium to a suitable pH.

The polyamide or nylon face fibers may be all polyamide or nylon fibers or may be blends of polyamide or nylon fibers with other types of textile fibers. All of the face fibers, part of the face fibers or none of the face fibers may be dyed prior to the dyeing of the jute in accordance with the present invention. Those face fibers in which all or part of the fiber is dyed are defined herein as dyed face fibers.

The cationic surface active agents or blocking agent may be applied to the textile material before the dyeing of the jute or simultaneously with the dyebath composition. At least 0.10 percent of the cationic surface active agent or blocking agent (based upon the weight of the textile material) is applied to the textile material. Although amounts as high as 2.0 percent of said cationic surface active agent may be applied to the textile material, it is preferred that about 0.25 to 1.0 percent of the cationic surface active agent or blocking agent be added thereto. Greater than 2.0 percent of cationic surface active agent results in no improvement in the prevention of the staining of the polyamide or nylon face fibers with the cationic or basic dyestuff being used to dye the jute in the jute backing.

The blocking agent or cationic surface active agent of this invention may be applied to the textile material by spraying, padding, immersion or by any other method which exposes the textile material to the specified cationic surface active agent or the blocking agent before adding the cationic dyestuff, or cationic surface active agent and the cationic dyestuff may be simultaneously applied. The dyebath composition for dyeing jute comprises at least 0.20 percent of the specified blocking agent or cationic surface active agent of this invention, a sufficient amount of an acid, a bases or a buffer solution to adjust the pH of the aqueous medium to about 3 to 11 and preferably from about 4 to 6, and at least one cationic dye suspended in an aqueous medium.

The baths of this invention may contain any amount of water ranging from about 10 parts water to about 1 part fabric to about 50 parts water to about 1 part fabric, but it is preferred that the water to fabric ratio be about 15 to 25 parts water to 1 part fabric. By fabric we mean the face fibers plus the jute backing.

It is critical that the temperature of the dyebath be maintained at a temperature not exceeding about 90° F. during the dyeing of the jute in the jute-backed textile material and/or during the application of the blocking agent. If the temperatures exceeds about 90° F. during the dyeing of the jute, the polyamide or nylon face fibers will become stained with the cationic or basic dyes which are used to dye the jute in the jute-backing. Although the application of the jute dyes and the blocking agent may be carried out as low as about 40° F., it is preferred that the jute dyeing and application of the blocking agent be carried out at about 80° F.

The pH of the dyebath may be adjusted by using acids such as acetic acid, formic acid and hydrochloric acid, bases such as, trisodium phosphate, tetrasodium pyrophosphate and caustic soda; and buffering compounds such as, monosodium phosphate, borax and acetic acid-sodium acetate mixtures. When the blocking agent is applied prior to the dyestuffs, a pH range of about 3 to about 11 is suitable. For the simultaneous application of the blocking agent and the dyestuff the pH may be adjusted to about 2 to 11 but is preferably adjusted to about 4 to about 6.

The following examples are set forth to illustrate more clearly the principles and practice of the invention to those skilled in the art. The amounts of chemicals and dyes used are based upon the fiber weight in all examples.

EXAMPLE 1

A carpent fabric consisting of equal parts of jute, cationic dyeable Du Pont type 844 nylon reduced affinity acid dyeable Du Pont type 485 nylon, regular affinity acid dyeable Du Pont type 846 nylon and deep dyeing affinity acid dyeable Du Pont type 847 nylon was dyed in the conventional manner with a combination of 0.25% Acid Blue 45, C.I. 63010 0.25% Disperse Yellow 3, C.I. 11855 and 0.1 Basic Red 17. The fabric had a multicolored effect. The jute was not dyed. The acid dyeable nylons were colored various shades of green and the cationic dyeable nylon was a bright orange. Since all the nylons are dyeable with disperse dyestuffs, in this case the yellow disperse dye shades the cationic and acid colors. After rinsing, equal portions of the fabric were treated in baths containing water at a ratio of 20:1 (based upon the weight of the fabric). To each bath maintained at 80° F. were added 2% of a 56% acetic acid (based upon the weight of the fabric), and the following additives (all amounts being calculated on the basis of total filler weight):

(a) None
(b) 0.33% lauryltrimethyl ammonium chloride
(c) 0.66% lauryltrimethyl ammonium chloride
(d) .25% dilauryldimethyl ammonium chloride
(e) .50% dilauryldimethylammonium chloride

After 10 minutes at 80° F. to each bath were added 0.25% aBsic Blue 3, C.I. 51005 and 0.25% Basic Yellow 3, C.I. 41005 (based upon total fabric weight) and the baths were maintained at 80° F. for 15 minutes followed by rinsing, then drying. The following results were obtained:

Staining on cationic dyeable nylon:	Color yield on jute
(a) Heavy	Quantitative.
(b) Heavy	Quantitative.
(c) Moderate	25% lost.
(e) None	Quantitative.
(e) None	Almost quantitative.

In the fabric samples treated with dilauryldimethylammonium chloride the cationic dyeable nylon was not stained with the cationic or basic dyes, and the color yield on the jute was either quantitative or nearly quantitative. The conventional retarder, lauryltrimethyl ammonium chloride permitted heavy or moderate staining of the cationic dyeable nylon.

EXAMPLE 2

Using the multifiber carpet of Example 1 dyed in the conventional manner as in Example 1, the jute backing was dyed to a heavier shade than in Example 1, using 0.35% Basic Blue 3, I.I. 51005, and 0.35% Basic Yellow 3, C.I. 41005 (based upon total fabric weight). While the cationic dyeable nylon of the control was heavily stained, other dyeings made in the presence of 0.25% to 0.40% dilauryldimethylammonium chloride were satisfactory with respect to both lack of staining of the cationic dyeable nylon and full color yield of the basic dyes on the jute backing. Similar satisfactory dyeings were obtained with 0.25% dilaurylamine acetate, dilaurylmethylamine acetate, dimethyldidecylammonium chloride, di-(2-ethylhexyl) amine acetate, stearylmethylammonium chloride, lauryl cyclohexylamine acetate and di-(2-hydroxypropyl)laurylamine acetate.

EXAMPLE 3

The multifiber carpet fabric of Example 1 was dyed in the conventional manner with a combination of 0.5% Acid Red 145, C.I. 23905, and 2% Basic Yellow 21. The cationic dyeable fiber was a bright yellow and the other nylons were various shades of red. After rinsing equal portions of the fabric were put into separate baths at 80° F. using a liquor ratio of 20:1. A buffer consisting of 0.5% of a 56% acetic acid and 1% sodium acetate (based upon fiber weight) were added to each bath. After 10 minutes application of the cationic surface active agent additives 0.5% Basic Red 14 was added, and the dye bath was maintained at 80° F. for 15 minutes. The samples were then rinsed with water and dried. As additives for obtaining full color yield on the jute and reserving the cationic dyeable nylon, both 0.25% dicocodimethylammonium chloride and 0.25%–0.40% distearyldimethylammonium chloride were found fully satisfactory. When the dyeings were repeated at 100° F. there was a loss of about 15% red dye from the jute and the cationic face fiber was heavily stained. When the dyeing was attempted at 80° F. using laurylpyridinium chloride additive at 0.5% based on the total fiber weight, the cationic face fiber was stained, and there was a loss of about 35% of color yield on the jute. Hence, this additive is not suitable. At lower concentrations, there was greater staining and at higher concentrations, further loss of yield on the jute.

EXAMPLE 4

The multifiber carpet fabric of Example 1 was dyed in the conventional manner with a combination of 0.3% Basic Yellow 21 and 0.5% Acid Red 57. The cationic dyeable nylon was dyed yellow and the other nylons different shades of red. After rinsing, the fabric was divided into two equal portions and put into separate baths for dyeing of the jute. To each new bath maintained at 80° F. were added 3% of a 56% acetic acid and 2% sodium acetate buffer. To one bath, 0.33% dilauryldimethylammonium chloride was added and the goods were treated for 5 minutes. Then 0.5% Basic Green 6 dyestuff was added and the dyeing was run for 15 minutes, followed by rinsing and drying. The control dyeing of the cationic face yarn was heavily stained, while the dyeing with the additive was unstained and the jute backing of both were equal in depth of shade.

EXAMPLE 5

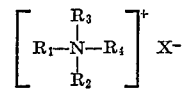
The multifiber carpet of Example 1 was dyed in the conventional manner with 0.3% Basic Blue 3, C.I. 51005, only, thus leaving the acid dyeable nylons undyed and the cationic dyeable nylon dyed to a bright blue. After rinsing, the procedure of Example 4 was followed using 0.33% dilauryldimethylammonium chloride as the additive and 0.5% Basic Yellow 13 to dye the jute. The cationic face yarn of the control was dyed to an intense yellowish green and even the acid dyeable nylons were stained with yellow dyestuff. The dyeing with the additive remained clean throughout with the cationic dyeable nylon face yarn the original bright blue shade, the acid dyeable face yarns unstained, and the jute backing dyed to the same depth as the control.

In accordance with the above examples, the objects of this invention have been carried out. The process and dyebaths compositions of this invention prevent the staining of polyamide face fibers with dyes which are used to dye the jute of jute-backed polyamide face fiber-containing textile materials. Even when the polyamide face fibers are not previously dyed the blocking agents of this invention prevent the staining of those face fibers while the jute is being dyed with dyestuffs which normally color or at least stain that type of face fibers.

The above examples are not meant to limit the scope of the invention or the application to which this invention may be directed. It is to be understood that although the invention has been described with specific reference to particular embodiments thereof, it is not to be so limited, since changes and alterations therein may be made which are in the full intended scope of this invention as defined by the appended claims.

What is claimed is:

1. The process of dyeing the jute of a jute-backed textile material containing a cationic dyeable polyamide to prevent the staining of said polyamide, comprising the steps of first treating said jute-backed textile with at least one cationic surface active agent having the formula:



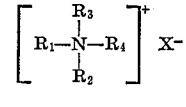
where X^- is any water-soluble anion; R_1 is an aliphatic hydrocarbon group containing at least 8 carbon atoms; R_4 is selected from the group consisting of —H, —CH_3 and other hydrocarbon alkyl groups; R_2 and R_3 are selected from the group consisting of hydrogen, aliphatic hydrocarbon groups, cycloaliphatic groups and 2-hydroxypropyl groups; and R_1, R_2, R_3 and R_4 contain a total of 16 to 45 carbon atoms and dyeing the jute of said treated jute-backed textile in a dyeabth comprising a cationic dyestuff, at a temperature of less than 90° F.

2. The process of claim **1** wherein said cationic surface active agent is selected from the group consisting of dilauryl dimethyl ammonium chloride, dilaurylamine acetate, dilaurylmethyl amine acetate, dimethyldidecyl ammonium chloride, di-(2-ethylhexyl) amine acetate, stearyltrimethyl ammonium chloride, di-(2-hydroxypropyl) laurylamine acetate, laurylcyclohexyl amine acetate, or combinations thereof.

3. The process of claim **1** wherein said jute-backed textile material is treated with said cationic surface active agent at a pH of about 3 to about 11.

4. The process of claim **1** wherein at least 0.20% of said cationic surface active agent (based on weight of the textile material) is applied to said textile material.

5. The process of dyeing the jute of a jute-backed textile material containing a cationic dyeable polyamide comprising forming a bath comprising a cationic dyestuff and a surface active agent having the following formula:



where X^- is any water-soluble anion; R_1 is an aliphatic hydrocarbon group containing at least 8 carbon atoms; R_4 is selected from the group consisting of —H, —CH_3 and other hydrocarbon alkyl groups; R_2 and R_3 are selected from the group consisting of hydrogen, aliphatic hydrocarbon groups, cycloaliphatic groups and 2-hydroxypropyl groups; and R_1, R_2, R_3 and R_4 contain a total of 16 to 45 carbon atoms, and maintaining said dyebath at a temperature of less than 90° F. whereby said jute is dyed and the staining of said polyamide is avoided.

6. The process of claim **5** wherein said cationic surface active agent is selected from the group consisting of dilauryl dimethyl ammonium chloride, dilaurylamine acetate, dilaurylmethyl amine acetate, dimethyldidecyl ammonium chloride, di(2-ethylhexyl amine acetate, stearyltrimethyl ammonium chloride, di-(2-hydroxypropyl) laurylamine acetate, laurylcyclohexyl amine acetate or combinations thereof.

7. The process of claim **5** wherein said dyebath comprises at least 0.20% (based upon the weight of said jute-backed textile material) of said cationic surface active agent.

8. The process of claim 5 wherein said dyebath is maitained at a pH of between about 4 to about 6.

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DONALD LEVY, Primary Examiner

U.S. Cl. X.R.

8—65, 15, 169

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,758,269 Dated September 11, 1973

Inventor(s) Friedrich F. Bartsch and Robert Feigin

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 47 after "many" insert -- cases --.

Column 2, line 58, correct the spelling of "unacceptable".

Column 4, line 49, change "0.0-2.0" to -- 0.1-2.0 --.
line 57, delete "amount" first occurrance.

Column 5, line 43, change "bases" to -- base --.

Column 6, line 8, correct the spelling of "carpet".
line 26, change "filler" to -- fiber --.
line 36, correct the spelling of "Basic".
line 46, change "(e)" first occurrance to --(d)--.
line 62, change "I.I." to -- C.I. --.

Column 9, line 2, correct the spelling of "maintained".

Signed and sealed this 7th day of May 1974.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents