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TREATING CELLULOSE ESTERS

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1 Claim. (Cl. 8—5)

In the treatment of cellulose esters, for instance, threads of acetyl cellulose, in aqueous media at high temperatures, particularly in an alkaline bath, the ester suffers a more or less considerable saponification. This change is manifested in acetate artificial silk by a loss of luster and in mixed fabrics by a dyeing of the effect threads together with the rest of the fabric, so that pure white effects or pure multi-effects cannot be obtained on these artificial fibers.

It has been necessary, therefore, to observe certain precautions in dyeing textiles containing a cellulose ester in the form of effect threads. Whereas many textiles must be dyed only in a boiling bath and, for the purpose of improving the exhaustion of the dye-bath, in presence of alkali, in the dyeing of fabrics containing acetate artificial silk an addition of alkali is prohibited and the disadvantage of a comparatively low temperature of about 75° C. for the bath has to be faced; for instance, in the case of many dyes there is not the affinity at such a low temperature for natural fibers that there is at the boiling point and dense fabrics, knitted goods and the like do not become dyed throughout.

The present invention relates to a process of treating, for instance, dyeing, mixed fabrics of cotton and cellulose ester artificial silk in an alkaline liquor which avoids the foregoing disadvantages by the addition to the liquor of a small proportion of amino-acetic acid or a salt thereof. This addition has a remarkable tendency to prevent saponification of the cellulose ester so that the luster of the ester threads is retained and pure white or variegated tints are obtained.

In consequence of this surprising phenomenon the dyer has at his disposal an increased choice of substantive cotton dyes for this branch of his industry. Furthermore, there is a simplification in the practical operation of dyeing in that supervision of the temperature of the bath becomes much easier.

It has already been proposed to add sulfurized phenols to the dye-bath for the purpose of reserving acetate artificial silk and natural silk in mixed fabrics containing them and cotton when dyeing with sulfurized dyes or vat dyes. If amino-acetic acid or a salt thereof is used instead of sulfurized phenol, it is possible to improve the affinity also of substantive dyes for the vegetable fiber, while at the same time even in a boiling dye-bath no saponification of the acetate artificial silk is to be noted.

The following examples illustrate the invention:—

Example 1.—10 grams of mixed fabric of cotton and acetate artificial silk are handled for 1 hour at the boiling point in a liquor containing per liter

	Grams
Chicago Blue 6 B (Schultz, Farbstofftabellen, 7th edition, No. 510)	0.2
Calcined sodium carbonate	0.3
Crystallized sodium sulfate	1.5
Sodium amino-acetate	1.75

There is obtained a pure acetate artificial silk effect. Without the addition of sodium amino-acetate the effect threads appear to be dyed strongly blue, since the cellulose produced by saponification adsorbs the dye nearly as well as cotton does. By dyeing at 75° C. the dye is less adsorbed by the cotton.

Example 2.—10 grams of mixed fabric of cotton and acetate artificial silk are dyed for 1 hour at the boiling point in a liquor containing per liter

	Grams
Chicago Blue 6 B (Schultz, Farbstofftabellen, 7th edition, No. 510)	0.2
Calcined sodium carbonate	0.3
Crystallized sodium sulfate	1.5
Sodium amino-acetate	1.75
The dye obtained as described in German specification No. 469,514 from acetyl-para-phenylenediamine and para-cresol	0.05

There is obtained, besides the blue dyed cotton, a clear yellow acetate artificial silk effect. By otherwise similar treatment but without the addition of sodium aminoacetate, the acetate artificial silk effect threads are dyed green in consequence of their partial saponification.

Example 3.—A mixed fabric of raw natural silk and acetate artificial silk is treated, for the purpose of separating the tassore silk adhering to the natural silk, for 1 hour at near the boiling point in a bath containing per liter of liquid

	Grams
A product made by condensing a fatty acid chloride with a taurin derivative	7.5
Calcined sodium carbonate	3
Sodium amino-acetate	1.75

The acetate artificial silk is scarcely attacked by the liquor whereas a similar treatment without the addition of sodium-amino-acetate produces a strong saponification of the acetate artificial silk.

It is obvious that my invention is not limited to the foregoing examples or to the specific details given therein. As can be seen from these

examples, I prefer to add the sodium salt, or generally an alkali metal salt of amino-acetic acid or of the reaction mixture as obtainable by double decomposition of chloroacetic acid and ammonia. However, I likewise may use the free amino-acetic acid. In this case it is necessary to add to the treating bath a corresponding amount of a neutralizing agent, since a reduction of the alkalinity of the bath is undesired. Inasmuch as other compounds having a similar pH value as sodium aminoacetate, show no similar preservative action on acetate silk, obviously, the behavior of my product cannot be said to be a buffering.

What I claim is:—

In a process for treating fabrics containing a cellulose ester with an alkaline liquor the step which comprises adding to the treating bath amino-acetic acid or a salt thereof.

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