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DELUSTERING CELLULOSE ESTER FABRICS

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4 Claims. (Cl. 8—135)

This invention relates to cellulose acetate fabrics which are delustered with a deposit of particles of a copolymer prepared from 50% to 90% of acrylonitrile and 50% to 10% of ethyl acrylate, and to the process for producing said delustered fabrics.

Rayon, cellulose acetate, and other synthetic fibers are commonly delustered by incorporating finely ground material in the spinning solution. The filaments thus prepared, however, present difficulties in dyeing and finishing and in the case of a heavily dyed fabric the delusterant effect is largely offset by the dye on the surface. Surface coatings on the filaments have not heretofore been satisfactory because of loss from wear, cleaning, etc.

It is now found that in the case of fabrics made with cellulose acetate filaments or fibers the cellulose acetate is delustered by treating the fabric with an aqueous bath containing ¼% to 4% of a dispersed copolymer prepared from acrylonitrile and ethyl acrylate, the percentage of acrylonitrile forming from 50% to 90% and the ethyl acrylate forming from 50% to 10% of the copolymer.

The dispersions which are useful in this invention may be prepared by known methods. In a particularly convenient procedure a mixture of monomeric acrylonitrile and monomeric ethyl acrylate is stirred into an aqueous solution of an emulsifying agent and a polymerization catalyst. The emulsion is heated until polymerization begins. More of the monomer may be added as polymerization proceeds until a desired solids content is reached.

For application to acetate fabric concentrated dispersion is added to a finishing bath to give solids contents between about ¼% and about 5 or 6%. Such baths deposit about ¼% to about 4% copolymer solids on cloth passed through the bath. The amount retained depends not only upon the concentration of the treating bath but also upon the amount of treating liquor left in the fabric. Excess liquor may be removed by squeezing, slot extracting, or other procedure. The fabric is then dried by passing through a closed heater or over heated cans.

The resulting fabric is uniformly and strongly delustered. The finish is washfast and highly resistant to wear or abrasion.

Further details of the delustering of cellulose acetate fabrics are given in the following illustrative examples.

Example 1

A sheer, all-acetate fabric, dyed with a red acetate dye, was padded through a bath containing 2% of a dispersed copolymer formed from 25% of ethyl acrylate and 75% of acrylonitrile, emulsified and polymerized in a solution containing isooctylphenoxy-ethoxyethoxy ethyl sodium sulfonate and ammonium persulfate. Excess bath liquor was expressed by rollers, leaving a take-up of about 90%. The fabric was then dried in a loop drier heated at about 220° F. The handle of the fabric was pleasant and the color was bright though the finish was matte.

Example 2

A piece of white sharkskin fabric was padded through a bath containing 4% of a dispersed copolymer prepared from 90% of acrylonitrile and 10% of ethyl acrylate. Excess treating liquor was removed by slot extraction and the fabric was dried on a frame. The resulting fabric was pleasing both as to appearance and as to handle. A full, uniform matte effect was obtained.

Example 3

A pink, all-acetate, woven fabric was passed through a bath containing 5% of a polymeric dispersion prepared by stirring and heating a mixture of 20 parts of ethyl acrylate and 80 parts of acrylonitrile emulsified in 200 parts of a solution containing six parts of hydroxy stearyl sodium sulfonate and two parts of ammonium persulfate. Excess solution was removed by gentle squeezing and the wet fabric dried on a tenter. The resulting fabric was soft and full without gloss.

Example 4

A knitted, cellulose acetate, tubular fabric was padded through a bath having finely dispersed therein about 4% of a copolymer prepared from a mixture of 50 parts of ethyl acrylate and 50 parts of acrylonitrile. The impregnated fabric was then spread by an internal shoe and dried. The resulting fabric had a full hand and was completely delustered.

Example 5

A mixed cotton, rayon, and cellulose acetate fabric was padded through a bath containing a dispersed copolymer prepared from a mixture of 20% ethyl acrylate and 80% acrylonitrile. The cloth was dried on cans. The finished fabric was matte in appearance with the cellulose acetate fully delustered and the rayon somewhat dulled.

While this invention has been described in terms of cellulose acetate, it is applicable to the delustering of fibers, filaments, and fabrics of

other cellulose esters or mixed ester, such as acetobutyrate.

I claim:

1. A process of delustering cellulose acetate in a fabric which comprises impregnating said fabric with a dispersion which consists of about ¼% to about 6% of a copolymer prepared from a mixture of 50% to 90% of acrylonitrile and 50% to 10% of ethyl acrylate suspended in an aqueous medium, retaining thereon about ¼% to about 4% of said copolymer based on the weight of the fabric, and drying the impregnated fabric.

2. A process of delustering cellulose actate fabric which comprises impregnating said fabric with a dispersion which consists of about ¼% to about 6% of a copolymer formed from a mixture of 50% to 90% of acrylonitrile and 50% to 10% of ethyl acrylate suspended in an aqueous medium, retaining thereon about ¼% to about 4% of said copolymer based on the weight of the fabric, and drying the impregnated fabric.

3. A cellulose acetate fabric delustered with discrete particles consisting of a copolymer prepared from a mixture of 50% to 90% of acrylonitrile and 50% to 10% of ethyl acrylate in an amount of ¼% to 4% based on the weight of the fabric.

4. A fabric containing cellulose acetate delustered with discrete particles consisting of a copolymer prepared from a mixture of 50% to 90% of acrylonitrile and 50% to 10% of ethyl acrylate in an amount of ¼% to 4% based on the weight of the fabric.

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