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METHOD OF PRODUCING CREPED FABRIC

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1 Claim. (Cl. 28—72)

This invention relates to creped fabrics of a novel type, characterized by the fact that the threads which bring about the crepe effect, are vinyl polymer threads of a torsion higher than 1500 turns to the metre. The invention also relates to a process for producing such fabrics, said process comprising using, in the direction in which creping is desired, threads consisting of a vinyl polymer, which are contractible under the action of heat, twisted higher than 1500 turns to the metre, and fixed without suppression of their contractibility, and subsequently treating the fabrics at a temperature which causes contraction of the vinyl threads used.

It has been known to bring about crepe effects or cloque effects by utilizing the property of certain threads to contract under the action of heat or under the action of various other treatments. It has been particularly suggested to obtain such effects by causing to contract threads of cellulose derivatives by means of swelling compositions. However, if more than negligible relief effects were thus obtained, it has not been found that the use of threads of increased torsion, brings about a notable difference in the appearance of the respective articles, and, especially, it did not result to a sufficient extent, in the very particular grain and undulation, brought about by twisting crepe threads of natural silk, or regenerated cellulose rayon. Furthermore, up to date it was completely unknown that different results could be obtained by utilizing contractibility, at elevated temperature, of vinyl threads, and the attempts made in order to utilize this property, were limited to the use of threads of normal torsion, i. e. torsion not exceeding a few hundreds of turns to the metre.

It has now been unexpectedly found that contraction of strongly twisted threads of vinyl polymers is not at all comparable with that of cellulose derivative threads and that, in contrast to cellulose derivative threads, contraction of said threads of vinyl polymers is accompanied in the fabrics by the same distorsion phenomena which are caused by wetting or steeping of conventional crepe threads. This could not be expected, because up to now it was assumed in the art that these phenomena are tied to swelling, which, as known, does not exist in vinyl threads.

As examples of vinyl polymers which can be used in carrying out the present invention, the following are mentioned: polymers of vinyl halides, acrylonitrile, vinyl ethers, vinyl esters, esters and amides of acrylic acid and methacrylic acid, vinylidene halides and cyanides, itaconic esters, vinyl benzene, vinyl imidazol, etc., and copolymers obtained from the beforementioned compounds. The term "vinyl polymer" is used in the present specification and claim to include all these polymers and copolymers.

The creped articles according to the present invention are of considerable interest in that contraction of the weft is final and insensible to wetting. This is a considerable technical improvement. In combining it with a hydrophobic warp (for example cellulose acetate, superpolyamide, vinyl threads) articles are obtained, which are completely insensible to water, can be washed with greatest ease and dry very rapidly.

However, in combination with the contractible threads,

any other textile material, for example wool, cotton, regenerated cellulose, etc., may be used.

Creping of the fabrics can be brought about in any suitable manner, for example by heating with gas, vapor, or liquid, by contact with a heated surface, etc.

The contractible vinyl fibres of a torsion higher than 1500 turns, can be applied in warp and weft, or, if desired in warp or weft, particularly in order to obtain cloque effects or effects known under the name "crepe mousse." In the latter case, each of the threads is assembled, in conventional manner, with a non-contractible thread, the nature of which may vary within the same fabric in order to obtain special effects.

The following examples illustrate some embodiments of the invention, to which the invention is not limited.

Example 1

A fabric of plain weave is prepared, in which the warp comprises per centimeter 44 cellulose acetate threads, 75 deniers, 24 strands, twisted at 250 turns, and the weft consists of drawn polyvinyl chloride threads of 100 deniers, twisted at 2000 turns to the metre, 27 picks per centimeter. 2 picks are woven with thread of **S** twist and 2 picks with thread of **Z** twist. The fabric is desized, in conventional manner, in a soap bath at 80° C. A crepe effect is thus obtained which presents all distortion effects of woven crepe viscose fabrics, and can be washed without affecting its dimensions.

Example 2

Assembled threads are used, consisting of one end of 100 deniers, contractible polyacrylonitrile thread of a torsion of 1800 turns, and one end of 45 deniers polyhexamethylene adipamide of a torsion of 150 turns. Alternately, in warp and weft, 2 assembled threads are woven, in which the polyacrylonitrile thread obtained **S** twist and 2 threads, in which it obtained **Z** twist. After desizing, a crepe mousse is obtained, which is entirely resistant to washing.

It will be understood from the above disclosure that the invention is not limited to the particular materials, steps, conditions and other details specifically disclosed and can be carried out with various modifications without departing from the scope of the invention as defined in the appended claim.

What is claimed is:

A process for producing a creped fabric showing the characteristic of pebble effect, comprising (*a*) the torsion of higher than 1500 turns to the meter, of vinyl polymer threads which are contractible under the action of heat; (*b*) fixing this torsion without suppression of the contractibility of the threads; (*c*) utilizing these threads in weaving in the direction in which the creping effect is desired; and subjecting the resulting fabric to a temperature causing contraction and formation of turns in the vinyl threads used.

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