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2,795,477

COLORATION OF FIBRES HAVING A POLYVINYL DERIVATIVE BASE

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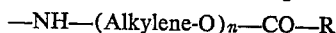
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4 Claims. (Cl. 8—25)

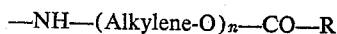
The present invention concerns improvements in and relates to the coloration of fibres having a polyvinyl derivative base such as for example, those which are constituted by drawn polyvinyl chloride and which are known on the market under the names "Rhovyl" and "Thermovyl."

It has been found that these fibres may be dyed in a satisfactory manner by means of anthraquinone derivatives containing a group of the following formula:



in which n is an integer and in which R is an alkyl radical containing less than four carbon atoms. This group is preferably in the α -position.

According to the present invention therefore a process for the coloration of fibres having a polyvinyl derivative base is provided which comprises applying thereto at least one anthraquinone dyestuff containing at least one group of the following formula:



in which n is an integer and in which R represents an alkyl group containing less than four carbon atoms.

The invention also includes fibres having a polyvinyl derivative base dyed with such dyestuffs.

It is surprising that these organic esters of hydroxy-alkylaminoanthraquinones are excellent dyestuffs for fibres having a polyvinyl derivative base, in view of the fact that the hydroxyalkylaminoanthraquinones have not, in themselves, any affinity for these fibres.

The dyestuffs which may be used for carrying out the invention may be prepared, for example, by condensation of an anthraquinone derivative containing an easily replaceable atom or group with monoethanolamine or with monohydroxyethyl-hydroxyethylamine, and subsequent esterification of the free alcoholic $-\text{OH}$ group by means of formic acid, acetic acid or propionic acid.

These dyestuffs may be applied to the polyvinyl fibres by means of already known general methods, such as, for example, those described in French Patents No. 1,007,911 of April 14, 1948 and No. 1,009,215 of May 27, 1948. The dyestuffs give bright shades of good fastness and may be applied alone or mixed with other derivatives of anthraquinone which, in themselves have only a slight affinity for polyvinyl fibres, but which yield thereon rich shades when they are used in admixture with the above mentioned dyestuffs.

The dyestuffs of the present invention dye polyvinyl fibres in shades, varying from yellowish-red to blue-green, which are very fast to water and to light.

The invention will be more clearly understood by reference to the following examples which are purely illustrative and in which the parts given are parts by weight.

Example 1

100 parts of Rhovyl fabric or yarn are introduced into a bath containing 5 parts of acetoxymethylaminoanthraquinone containing 20% of pure dyestuff, 750 parts of

2

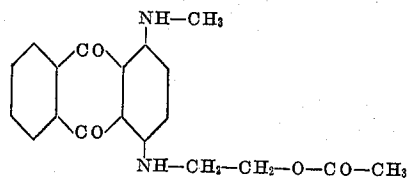
water and 8 parts of a mixture of p-chlortoluene and the product of condensation of ethylene oxide on lauryl alcohol. The initial temperature of the bath which is from 20–25° C. is raised to 40–42° C. within a period of 20 minutes. It is kept at this temperature for half an hour. Rinsing is then effected in tepid water, then in cold water and the yarn or fabric is dried below 40° C. The Rhovyl is dyed in bright, fast shades.

Example 2

The same dyestuff as in the previous example dyes Thermovyl in the presence of 2 grs. per litre of a condensation product of ethylene oxide and lauryl alcohol. The goods are steeped in a bath at 50° C. The temperature is raised to 90–95° C. and kept for an hour and a half at that level. The goods are rinsed in water and dried. The Thermovyl is dyed in clear yellowish-red shades which are very fast to light.

Example 3

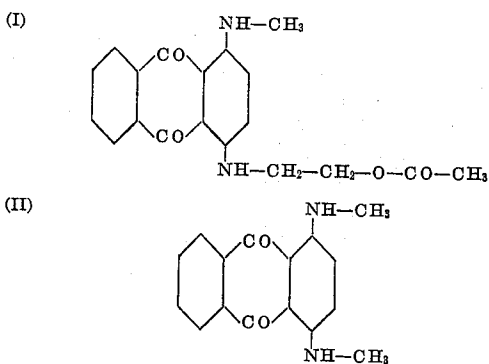
The dyestuff having the following formula:



under conditions similar to those in the previous examples, yields blue shades on Rhovyl and on Thermovyl.

Example 4

If, under the same conditions as in the preceding examples, there is used a mixture of the dyestuffs of the formulae:



in the following proportions:

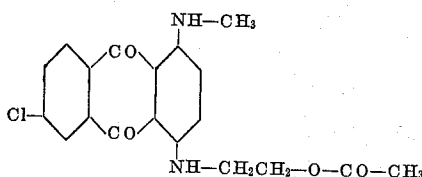
80% of the dyestuff of Formula I and 20% of the dyestuff of Formula II for example, very rich pure blue shades are obtained on Rhovyl and on Thermovyl.

Example 5

The dyestuff formed by 1-methylamino-2-bromo-4-acetoxyethylamino-anthraquinone dyes the polyvinyl fibres by the processes given above in reddish-blue shades.

Example 6

With 1-methylamino-4-acetoxyethylamino-6-chloro-anthraquinone of the formula:



under the same conditions as in the preceding examples, greenish-blue shades are obtained.

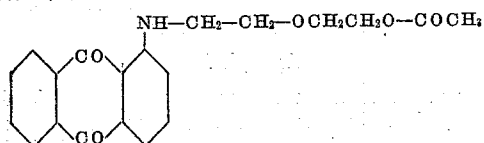
3

Example 7

1 - methylamino - 4 - acetoxyethylamino - 5:8 - dihydroxyanthraquinone also give bluish-green shades on Rhovyl and on Thermovyl under the conditions stated above.

Example 8

100 parts of Rhovyl fabric are introduced into a bath containing 5 parts of the dyestuff of the following formula:



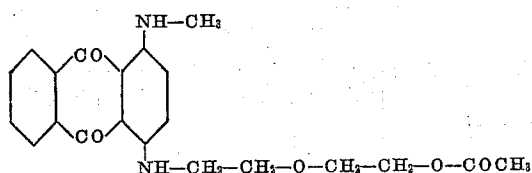
with 20% of pure dyestuff, 750 parts of water and 8 parts of a mixture of p-chlortoluene and the product of condensation of ethylene oxide on lauryl alcohol.

The initial temperature of the bath which is from 20-25° C. is raised to 40-42° C. within a period of 20 minutes. This temperature is maintained for half an hour. Rinsing is first effected in tepid water, then in cold water and the fabric is dried below 40° C. The Rhovyl fabric is dyed in beautiful yellowish-red shades.

The anthraquinone dyestuff used above is obtained by acetylation, in the presence of pyridine, of the condensation product obtained by the action of monohydroxyethyl-hydroxyethylamine on α -chloroanthraquinone, in the presence of pyridine and copper acetate at the boil.

Example 9

The dyestuff of the following formula:



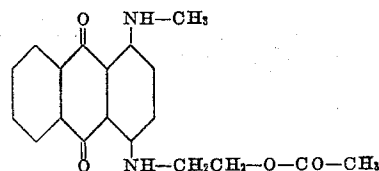
yields, under conditions similar to those in Example 8, greenish-blue shades on Rhovyl or Thermovyl.

The dyestuff may be obtained by acetylation, in the presence of pyridine, of 1-methylamino-4-(monohydroxyethyl-hydroxyethyl)amino-anthraquinone.

4

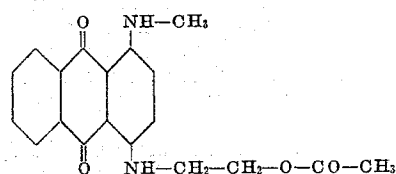
I claim:

1. Process for the colouration of polymerised vinyl chloride textile fibres which comprises applying thereto at least the anthraquinone dyestuff of the following formula:



2. Process as claimed in claim 1 in which the anthraquinone dyestuff is used in admixture with another anthraquinone derivative.

3. Polymerised vinyl chloride textile fibres coloured by means of the anthraquinone dyestuff of the following formula:



4. Fibres as claimed in claim 3 in which the anthraquinone dyestuff is used in admixture with another anthraquinone derivative.

References Cited in the file of this patent

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