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HAIR DYE

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6 Claims. (Cl. 167—88)

My present invention relates to a new process for dyeing living hair and to new preparations useful for this purpose.

Another object of my invention is to provide a preparation for dyeing living hair, which can be stored for a long time without decomposition and in a form in which it is not oxidized by the air, but from which it can be easily transformed into the active form which is oxidizable on the hair without use of an oxidizing agent or a metal mordant.

Further objects of my invention will be seen from the detailed specification following hereafter.

For dyeing living hair in addition to natural substances like henna and reng, the so-called Persian hair dye, synthetic substances have come into use in increasing degree. The latter include chiefly the hydroxy-, amino-hydroxy- and diamino-compounds of the aromatic series, for instance, pyrogallol, para-aminophenol, para-toluylene diamine, para-amino-diphenylamine and naphthylene diamine. On account of its strong toxic action para-phenylene diamine is forbidden for use in most countries. However, other permissible substances of this kind cause more or less considerable irritation of the skin of especially sensitive individuals and attempts have been made in various ways to rob such compounds of their injurious effect. The sensitivity of individuals, however, is so various that it cannot be asserted that this or that compound will have no irritating effect on the human skin.

This invention is based on the observation that 1.2.4-trihydroxy-compounds of benzene and naphthalene, if desired containing alkyl-, hydroxyalkyl- and alkoxy-groups as substituents, are surprisingly suitable for dyeing living hair. On account of their insufficient durability they are advantageously used in the form of their triacyl-compounds and in this form employed for preparation of the dye-bath. By the addition of an alkaline agent, such as sodium carbonate, ammonia, a phosphate or the like they are saponified to the trihydroxy-compounds. These, under the influence of atmospheric oxygen, are converted on the hair into compounds resembling quinone; thus for example, from 1.2.4-hydroxynaphthalene the 2-hydroxy-1.4-naphthoquinone is formed which is the compound present in henna.

With compounds of the said kind hair dyes of blond to titian red may be obtained. By shading with known synthetic substances of the above kind lighter and darker tints may be obtained so that by suitable mixtures all dyeings from the lightest blond to black may be produced.

An addition of a small proportion of a metal salt, for example a salt of iron, copper, cobalt or nickel, to the dye bath hastens the absorption of the oxidation dye and, within certain limits, influences the color tint. The oxidation may be left to the action of the air or there may be added to the dye bath hydrogen peroxide, as is known practice in dyeing pelts. The hair dyes obtained are of good fastness, particularly to rubbing.

In making up the new hair dyes to tablet form, which makes possible an accurate dose, the constituents necessary for shading and for saponification may be included.

The following examples illustrate the invention:

Example 1.—1.5 grams of 1.2.4-triacetylhydroxynaphthalene are saponified in 10 cc. of alcohol and 20 cc. of water with 2 grams of calcined sodium carbonate at boiling temperature. The solution is cooled to about 30° C. and the well degreased grey hair is brushed with it. After a short time the hair is rinsed, soaped and dried; it then exhibits a titian red color.

Example 2.—1 gram of 1.2.4-triacetylhydroxynaphthalene and 0.5 gram of 1.2.4-triacetylhydroxybenzene are saponified in 10 cc. of alcohol and 20 cc. of water with 2 grams of calcined sodium carbonate at the boiling point of the mixture. When the solution is cooled to 30° C. and 0.5 cc. of hydrogen peroxide of 30 per cent. strength has been added it is brushed into the well degreased grey hair. After a short time the hair is rinsed, soaped and dried; it exhibits a full blond.

Example 3.—A mixture of 1 gram of 1.2.4-triacetylhydropynaphthalene and 1 gram of 1.2.4-triacetylhydroxy-benzene and 0.5 gram of para-amino-diphenylamine is dissolved in 10 cc. of alcohol and 20 cc. of water and the solution is boiled for a short time after addition of 2 grams of calcined sodium carbonate. The solution cooled to about 30° C. is mixed with 2 cc. of a solution of ferrous ammonium sulfate of 10 per

cent. strength and then brushed on the well degreased grey hair. After a short time the hair is rinsed, soaped and dried; it exhibits a full black.

Example 4.—For making tablets the following substances are mixed together and the mixture compressed to shape:

	Parts
1.2.4-triacetylhydroxynaphthalene	50
1.2.4-triacetylhydroxybenzene	15
Starch	5
Dextrine	5
Urea	5
The sodium salt of an N-butylated naphthalene-α-sulfonic acid	20

The hair dye thus made dyes grey hair red-blond.

Example 5

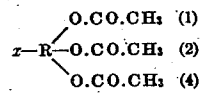
	Parts
1.2.4-triacetylhydroxynaphthalene	15
Para-aminodiphenylamine	5
Para-aminophenol	5
Meta-toluylene diamine	5
Starch	5
Dextrin	5
Calcined sodium carbonate	18
A wetting agent made as described in German specification No. 538,762 and made by treating castor oil with 1-naphthyl-5-sulfonic acid in presence of sulfuric acid	42

are mixed together and moulded to tablets. This hair dye dyes grey hair brown.

It is obvious that my invention is not limited to the foregoing examples or to the specific details given therein. Thus, for instance, I have chosen in the examples the triacetylhydroxy compounds. Obviously, in the same manner other acyl compounds of the trihydroxynaphthalene or -benzene may be used. On the other hand, such compounds bearing a methyl-, ethyl-, hydroxyethyl- or alkoxy-group in the nucleus may be used in the same manner.

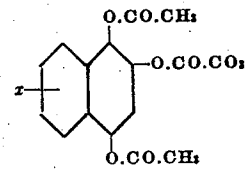
What I claim is:

1. A hair dye comprising the triacetyl compound of the general formula



wherein R stands for a radicle of the group consisting of phenyl and naphthyl and x stands for a member of the group consisting of hydrogen, methyl, ethyl and hydroxyethyl.

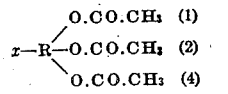
2. A hair dye comprising the triacetyl compound of the general formula



wherein x stands for a member of the group consisting of hydrogen, methyl, ethyl, and hydroxyethyl.

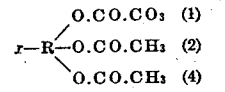
3. A hair dye comprising 1,2,4-triacetylhydroxynaphthalene.

4. A hair dye preparation containing the triacetyl compound of the general formula



wherein R stands for a radicle of the group consisting of phenyl and naphthyl and x stands for a member of the group consisting of hydrogen, methyl, ethyl and hydroxyethyl, and an alkaline agent capable of saponifying the acetyl groups when the preparation is dissolved in water and boiled.

5. A hair dye preparation containing the triacetyl compound of the general formula



wherein R stands for a radicle of the group consisting of phenyl and naphthyl and x stands for a member of the group consisting of hydrogen, methyl, ethyl and hydroxyethyl, and sodium carbonate.

6. A hair dye preparation containing 1,2,4-triacetyl hydroxynaphthalene and sodium carbonate.

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