

UNITED STATES PATENT OFFICE

2,047,066

SOFTENING AGENT

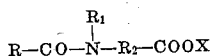
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8 Claims. (Cl. 252—1)

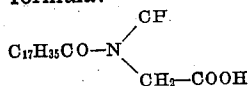
The present invention relates to softening of cellulosic fibers, that is artificial silk and cotton, with the aid of water-soluble salts of aliphatic primary or secondary aminomonocarboxylic acids containing higher saturated or unsaturated fatty acid radicals as substituents attached to the nitrogen atom.

By fatty acids of a high molecular weight I mean fatty acids containing at least 8 carbon atoms in the molecule. The softening agents correspond to the probable general formula:

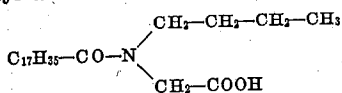


wherein R stand for an aliphatic hydrocarbon radical which contains at least 7 carbon atoms and may be unsaturated, R₁ means an aliphatic hydrocarbon radical such as an alkyl or a cycloalkyl group, for instance, CH₃ or C₂H₅, R₂ represents a methylene group which may be substituted, and X stands for hydrogen, ammonium (NH₄) or a metallic equivalent.

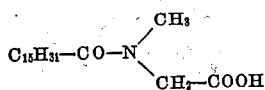
Such products are, for instance, stearyl-sarcosine of the formula:



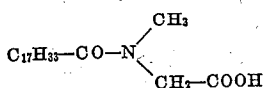
stearylbutyl-amino-acetic acid of the formula:



palmityl-sarcosine of the formula:



and oleyl-sarcosine of the formula:



which, in the form of its sodium salt, is a soap-like colorless substance soluble in water.

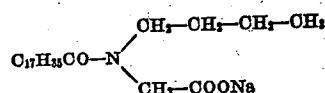
These condensation products are obtainable in the usual manner by causing a saturated or unsaturated higher fatty acid of the kind referred to above or a derivative thereof to react upon an aliphatic amino-monocarboxylic acid containing a primary or secondary amino group or a salt thereof. The process itself can also be carried out with the halides, anhydrides or esters of the above mentioned fatty acids in the most varied

manners. If, in the condensation, a mixture of different saturated or unsaturated fatty acids of a high molecular weight is employed, valuable mixtures of condensation products are obtained. The softening agents represent, in the form of their alkali metal salts, colorless or weakly colored soap-like substances being soluble in water with a great frothing capacity. Contrary to the usual soaps of higher fatty acids the new compounds show a better solubility in water and a greater stability to acid reagents. They are particularly distinguished by the fact that their alkali metal salts show a good softening effect on artificial silk.

The following examples will illustrate the present invention but without limiting it thereto; the parts are by weight.

Example 1.—Viscose is dyed in a bath heated to 80° C. with 1% of Benzo blue 2B (Colour Index, first edition Jan. 1924, page 104, No. 406) 10% of sodium sulfate and 0.25 grams per liter of stearyl-sarcosine (sodium salt). The addition of stearyl-sarcosine gives a soft touch to the silk. Likewise, the softening agent can be added to the last rinsing bath instead of being added to the dyeing bath.

Example 2.—Viscose is dyed in a bath heated to 80–85° C. with 1% of Benzo fast red GL (Schultz 1923, 2nd volume, page 18). 20% of sodium sulfate and 2% of the condensation product from stearyl chloride and the sodium salt of butyl-amino-acetic acid of the formula:

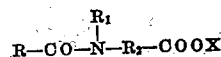


The addition of this stearic acid derivative imparts a soft touch to the viscose.

Example 3.—A quite similar effect is produced by replacing the stearyl-sarcosine of *Example 1* by palmityl-sarcosine.

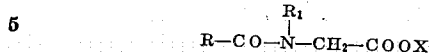
I claim:

1. The process which comprises acting on cellulosic fibers with condensation products of the probable general formula:



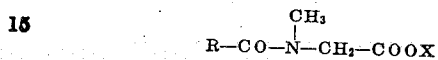
wherein R stands for an aliphatic hydrocarbon radical which contains at least 7 carbon atoms and may be unsaturated, R₁ means an alkyl or cycloalkyl radical, R₂ represents a methylene radical which may be substituted, and X stands for hydrogen, ammonium or a metallic equivalent.

2. The process which comprises acting on cel-
lulosic fibers with condensation products of the
probable general formula:



wherein R stands for an aliphatic hydrocarbon
radical containing at least 7 carbon atoms, R₁
means a cycloalkyl group, and X stands for an
alkali metal.

3. The process which comprises acting on arti-
ficial silk and cotton fibers with condensation
products of the probable general formula:

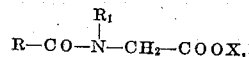


wherein R stands for an aliphatic hydrocarbon
radical containing at least 7 carbon atoms, and
X represents an alkali metal.

4. The process which comprises acting on arti-
ficial silk and cotton fibers with the sodium salt
of stearyl-sarcosine

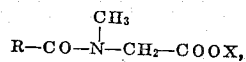
5. A cellulosic textile material impregnated

with a condensation product of the probable gen-
eral formula



in which R denotes an aliphatic hydrocarbon
radical containing at least seven carbon atoms,
R₁ denotes an alkyl or cycloalkyl group and X
denotes an alkali metal.

6. A cellulosic textile material impregnated
with a condensation product of the probable gen-
eral formula



in which R denotes an aliphatic hydrocarbon
radical containing at least seven carbon atoms
and X denotes an alkali metal.

7. A cellulosic textile material impregnated
with a stearyl sarcosine alkali metal salt.

8. A viscose artificial silk material impreg-
nated with a stearyl sarcosine alkali metal salt.

EUGEN GLIETENBERG.