



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 0 332 270 B2**

(12) **NEW EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the opposition decision:
04.07.2001 Bulletin 2001/27

(51) Int Cl.7: **C11D 3/00**, C11D 3/30,
C11D 1/88

(45) Mention of the grant of the patent:
05.06.1996 Bulletin 1996/23

(21) Application number: **89200545.5**

(22) Date of filing: **06.03.1989**

(54) **Fabric conditioning composition**

Wäscheweichmacherzusammensetzung

Composition de conditionnement pour le linge

(84) Designated Contracting States:
CH DE ES FR GB IT LI NL SE

(30) Priority: **11.03.1988 GB 8805837**

(43) Date of publication of application:
13.09.1989 Bulletin 1989/37

(73) Proprietors:
• **UNILEVER N.V.**
3013 AL Rotterdam (NL)
Designated Contracting States:
CH DE ES FR IT LI NL SE
• **UNILEVER PLC**
London EC4P 4BQ (GB)
Designated Contracting States:
GB

(72) Inventors:
• **Martin, John Robert**
Birkenhead Merseyside L43 0RA (GB)
• **Neillie, William Frederick Soutar**
Wirral Merseyside L48 2JT (GB)

• **Turner, Graham Andrew**
Wirral, Merseyside L62 6EA (GB)
• **Wraige, Douglas**
Chester, Cheshire, CH2 1NN (GB)

(74) Representative: **Elliott, Peter William et al**
Unilever plc
Patent Department,
Colworth House
Sharnbrook
Bedford MK44 1LQ (GB)

(56) References cited:
EP-A- 0 026 528 EP-A- 0 125 031
EP-A- 0 199 382 EP-A- 0 210 704
EP-A- 0 239 910 DD-A- 251 784
DE-A- 2 805 767 FR-A- 2 593 517
GB-A- 2 160 886 US-A- 4 238 531

Remarks:

The file contains technical information submitted
after the application was filed and not included in this
specification

EP 0 332 270 B2

Description

[0001] This invention relates to a fabric conditioning composition suitable for conditioning fabrics during the rinse step of a fabric laundry process.

[0002] It is known to treat fabrics with a fabric conditioning composition following a fabric washing process which often involves the use of anionic surface active materials.

[0003] In the treatment of fabrics in the rinse cycle of a fabric laundry process it is known in the art to add one or more conditioning agents. For instance it is known from British Patent Specification GB-A-1 260 584 (ARMOUR) to soften fabrics in the rinse cycle by the use of a composition containing a quaternary ammonium compound and a tertiary amine oxide.

[0004] It is known that anionic surface active materials carried over from the wash cycle of the fabric laundry process can have a detrimental effect on the effectiveness of fabric conditioning compositions containing fabric softening agents which are used in the rinse step of the fabric laundry process. This problem can be alleviated if the fabrics are thoroughly rinsed before they are treated with a fabric conditioner, alternatively this problem can possibly be overcome by using fabric conditioning compositions which are not as sensitive to the presence of anionic surface active agents. Furthermore, it is known from European patent 63 899 (UNILEVER), to overcome the problem of anionic carry-over by the use of anionic scavengers, such as aluminium chlorohydrate.

[0005] EP-A-0,210,704 discloses a water-insoluble, water-dispersible fabric softening composition comprising an amine, a phosphate ester and an amine oxide. The softening composition is intended for use with detergents, to provide a softening-through-the-wash effect.

[0006] GB-A-2,160,886 discloses a solid detergent bar which is also capable of softening fabrics during washing. The bar comprises an anionic, nonanionic, amphoteric, cationic or zwitterionic surfactant; a builder; a long chain aliphatic amide or amine oxide; a cellulosic derivative; a softening agent and talc, aluminium formate or calcined sodium carbonate. The softening agent may be a quaternary ammonium salt having at least one C₁₆-C₂₂ aliphatic radical, an imidazolinium salt, a tertiary amine or a smectic clay. The combination of an amine and a quaternary ammonium softening agent is not, however, specifically disclosed.

[0007] FR-A-2,593,517 describes a detergent composition which is also capable of softening fabrics. The composition includes, inter alia, an anionic surfactant; a cationic softener, which may be a di-lower-di-higher alkyl quaternary ammonium compound; and an ethoxylated tertiary amine.

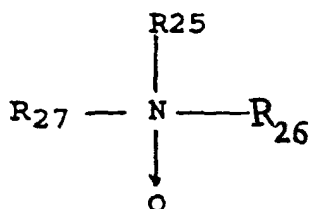
[0008] It is an object of the present invention to provide fabric conditioning compositions which provide improved softening benefits to fabrics, in the absence, but also in the presence of anionic carry-over.

[0009] It is a further object of the present invention to provide fabric conditioning compositions which are stable, easy to prepare especially when manufacturing a product with a viscosity above 100 mPas, and which have an attractive creamy appearance.

[0010] We have now surprisingly discovered that one or more of the above mentioned objects can be fulfilled if in the fabric conditioning composition a cationic fabric softening agent is combined with certain other components.

[0011] Thus, accordingly there is provided an aqueous liquid fabric conditioning composition comprising from 1 to 60% by weight of a combination of:

- (i) 20% to 90% by weight of a cationic quaternary ammonium fabric softening agent having two C₁₂₋₂₄ hydrocarbyl chains and a solubility in water at pH 2.5 and 20°C of less than 10g/l;
- (ii) 5% to 70% by weight of an amine; and
- (iii) 5% to 60% by weight of an amphoteric fabric conditioning material wherein said amphoteric fabric conditioning material is selected from tertiary amine oxides of the following formula:



wherein:

- a) R₂₅ and R₂₆ are C₈₋₂₄ hydrocarbyl chains, R₂₇ is an hydrocarbyl group containing 1-4 carbon atoms or a group -(CH₂,CH₂O)_nH wherein n is an integer from 1 to 6;

the percentage by weight of (i), (ii) and (iii) being based on the total weight of components (i), (ii) and (iii) in the composition.

Detailed description of the invention

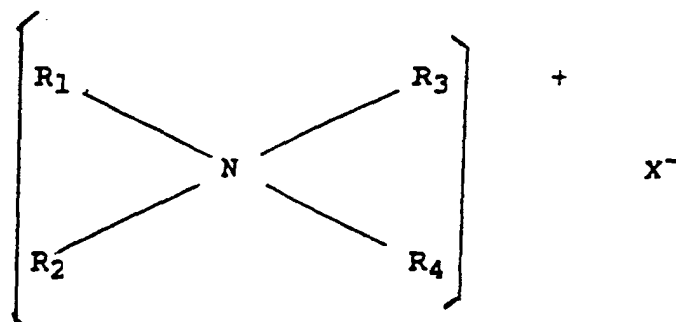
[0012] Fabric conditioning compositions according to the present invention comprise at least the following three active ingredients:

- (i) a cationic fabric softening agent
- (ii) an amine
- (iii) an amphoteric fabric conditioning material

The cationic fabric softening agent

[0013] The cationic fabric softener material is a cationic material which is water-insoluble in that these materials have a solubility in water at pH 2.5 and 20°C of less than 10 g/l. The materials are cationic quaternary ammonium salts having two C12-24 hydrocarbyl chains.

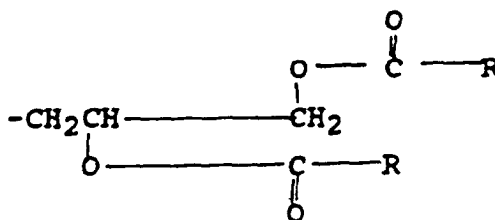
[0014] Well-known species of substantially water-insoluble quaternary ammonium compounds have the formula



wherein R_1 and R_2 represent hydrocarbyl groups from about 12 to about 24 carbon atoms; R_3 and R_4 represent hydrocarbyl groups containing from 1 to about 4 carbon atoms; and X is an anion, preferably selected from halide, methyl sulfate and ethyl sulfate radicals.

[0015] Representative examples of these quaternary softeners include ditallow dimethyl ammonium chloride; ditallow dimethyl ammonium methyl sulfate; dihexadecyl dimethyl ammonium chloride; di(hydrogenated tallow) dimethyl ammonium methyl sulfate; dihexadecyl diethyl ammonium chloride; di(coconut) dimethyl ammonium chloride. Ditallow dimethyl ammonium chloride, di(hydrogenated tallow) dimethyl ammonium chloride, di(coconut) dimethyl ammonium chloride and di(coconut) dimethyl ammonium methosulfate are preferred.

[0016] Suitable materials also include dialkyl ethoxyl methyl ammonium methosulphate based on soft fatty acid, dialkyl ethoxyl methyl ammonium methosulphate based on hard fatty acid, and a material in which R_3 and R_4 represent methyl, R_1 is C_{13-15} , R_2 is CH_2CH_2OCOR , where R is stearyl, and X is methosulphate. Materials in which R_2 , R_3 and R_4 each represent methyl, R_1 is the group

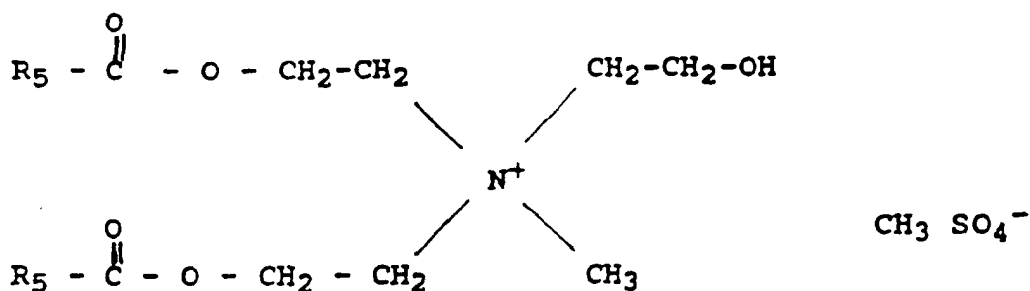


where R is hardened tallow and X is methosulphate are also suitable. Ditallow dimethyl ammonium chloride, di(hydrogenated tallow alkyl) dimethyl ammonium chloride, di(coconut alkyl) dimethyl ammonium chloride and di(coconut alkyl) dimethyl ammonium methosulfate are preferred.

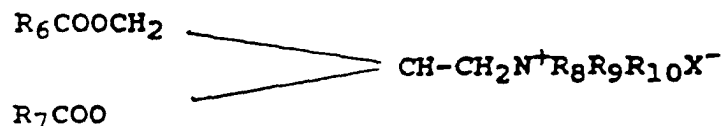
[0017] Other preferred cationic compounds include those materials as disclosed in EP 239,910 (P&G).

[0018] In this specification the expression hydrocarbyl group refers to alkyl or alkenyl groups optionally substituted or interrupted by functional groups such as -OH, -O-, -CONH-, -COO-, etc.

[0019] Other preferred materials are the materials of formula

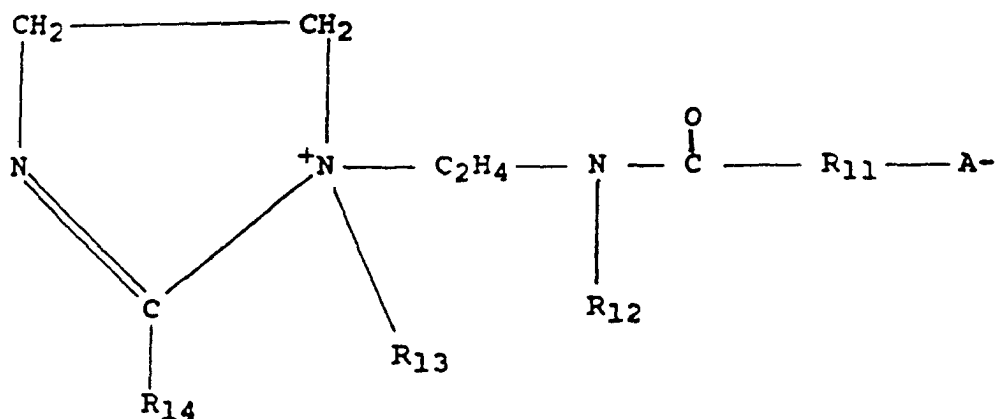


R₅ being partially hardened tallow, which is available from Stepan under the tradename Stepanex VRH 90 and



where R₈, R₉ and R₁₀ are each alkyl or hydroxyalkyl groups containing from 1 to 4 carbon atoms, or a benzyl group. R₆ and R₇ are each an alkyl or alkenyl chain containing from 11 to 23 carbon atoms, and X⁻ is a water soluble anion, substantially free of the corresponding monoester.

[0020] Another class of preferred water-insoluble cationic materials are selected from the hydrocarbylimidazolinium salts believed to have the formula:



wherein R₁₃ is a hydrocarbyl group containing from 1 to 4, preferably 1 or 2 carbon atoms, R₁₁ is a hydrocarbyl group containing from 12 to 24 carbon atoms, R₁₄ is an hydrocarbyl group containing from 12 to 24 carbon atoms and R₁₂ is hydrogen or an hydrocarbyl containing from 1 to 4 carbon atoms and A⁻ is an anion, preferably a halide, methosulfate or ethosulfate.

[0021] Preferred imidazolinium salts include 1-methyl-1-(tallowylamido-) ethyl -2-tallowyl- 4,5-dihydro imidazolinium methosulfate and 1-methyl-1-(palmitoylamido)ethyl -2-octadecyl-4,5- dihydroimidazolinium chloride. Other useful imidazolinium materials are 2-heptadecyl-1-methyl-1-(2-stearylamo)ethyl-imidazolinium chloride and 2-lauryl-1-hydroxyethyl-1-oleyl-imidazolinium chloride. Also suitable herein are the imidazolinium fabric softening components of US patent No 4 127 489, incorporated by reference.

[0022] Representative commercially available materials of the above classes are the quaternary ammonium compounds Arquad 2HT (ex AKZO); Noranium M2SH (ex CEKA); Aliquat-2HT (Trade Mark of General Mills Inc), Stepanex

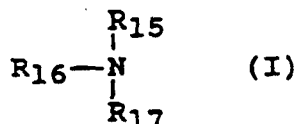
Q185 (ex Stepan); Stepanex VP85 (ex Stepan); Stepanex VRH90 (ex Stepan); Synprolam FS (ex ICI) and the imidazolinium compounds Varisoft 475 (Trade Mark of Sherex Company, Columbus Ohio) and Rewoquat W7500 (Trade Mark of REWO).

The amines

[0023] The compositions according to the invention also contain in addition to cationic fabric softening agents, one or more amines.

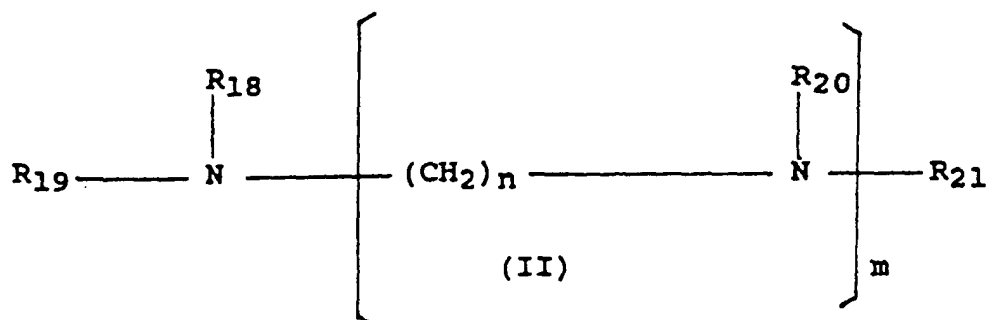
[0024] The term "amine" as used herein can refer to

(i) amines of formula



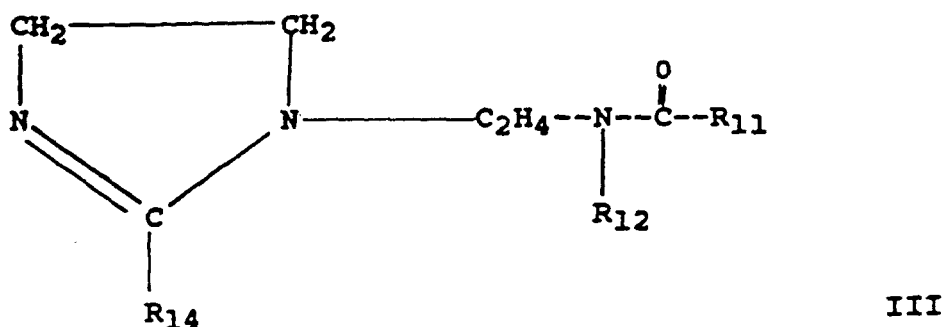
wherein R_{15} , R_{16} and R_{17} are defined as below;

(ii) amines of formula



wherein R_{18} , R_{19} , R_{20} and R_{21} , m and n are defined as below.

(iii) imidazolines of formula



wherein R_{11} , R_{12} and R_{14} are defined as above.

(iv) condensation products formed from the reaction of fatty acids with a polyamine selected from the group consisting of hydroxy alkylalkylenediamines and dialkylenetriamines and mixtures thereof. Suitable materials are disclosed in European Patent Application 199 382 (Procter and Gamble).

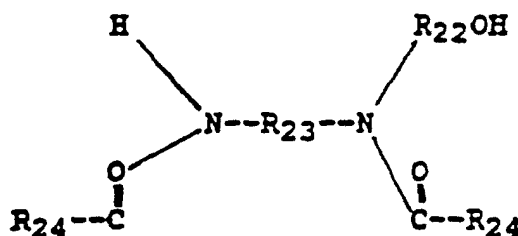
[0025] When the amine is of the formula I above, R_{15} is a C_6 to C_{24} hydrocarbyl group, R_{16} is a C_1 to C_{24} hydrocarbyl group and R_{17} is a C_1 to C_{10} hydrocarbyl group. Suitable amines include those materials from which the quaternary ammonium compounds disclosed above are derived, in which R_{15} is R_1 , R_{16} is R_2 and R_{17} is R_3 . Preferably, the amine is such that both R_{15} and R_{16} are C_6 - C_{20} alkyl with C_{16} - C_{18} being most preferred and with R_{17} as C_{1-3} alkyl, or R_{15} is an alkyl or alkenyl group with at least 22 carbon atoms and R_{16} and R_{17} are C_{1-3} alkyl. preferably these amines are protonated with hydrochloric acid, orthophosphoric acid (OPA), C_{1-5} carboxylic acids or any other similar acids, for use in the fabric conditioning compositions of the invention.

[0026] When the amine is of formula II above, R_{18} is a C_6 to C_{24} hydrocarbyl group, R_{19} is an alkoxyated group of formula $-(CH_2CH_2O)_yH$, where y is within the range from 0 to 6, R_{20} is an alkoxyated group of formula $-(CH_2CH_2O)_zH$ where z is within the range from 0 to 6 and m is an integer within the range from 0 to 6, and is preferably 3. When m is 0, it is preferred that R_{18} is a C_{16} to C_{22} alkyl and that the sum total of z and y is within the range from 1 to 6, more preferably 1 to 3. When m is 1, it is preferred that R_{18} is a C_{16} to C_{22} alkyl and that the sum total of x and y and z is within the range from 3 to 10.

[0027] Representative commercially available materials of this class include Ethomeen (ex Armour) and Ethodumeen (ex Armour).

[0028] Preferably the amines of type (ii) or (iii) are also protonated for use in the fabric conditioning compositions of the invention.

[0029] When the amine is of type (iv) given above, a particularly preferred material is



where R_{22} and R_{23} are divalent alkenyl chains having from 1 to 3 carbon atoms, and R_{24} is an acyclic aliphatic hydrocarbon chain having from 15 to 21 carbon atoms. A commercially available material of this class is Ceranex HC39 (ex Sandoz).

The tertiary amine oxide fabric conditioning material

[0030] The tertiary amine oxide fabric conditioning material for use in a composition according to the invention should be a fabric substantive amphoteric material. Suitable amphoteric materials form a particulate dispersion at a concentration of less than 1 g/l at at least one temperature between 0 and 100°C.

[0031] It is already known, for instance from US 3,984,335 (BASF company) to use a fatty amphoteric compound having one long hydrocarbyl chain in liquid fabric softening components.

[0032] The tertiary amine oxide compounds have two long hydrocarbyl chains, each chain having 8-24 C-atoms, preferably 10-20 C-atoms, most preferred around 16 C-atoms.

[0033] Preferably the amphoteric fabric substantive materials are water insoluble and have a solubility in water at pH 2.5 at 20°C of less than 10 g/l. The HLB of the amphoteric fabric substantive material is preferably less than 10.0.

[0034] Examples of amphoteric materials of the above groups and their method of preparation are given in our co-pending European patent application EP-A-0 326 213.

[0035] Amine oxides containing two hydrocarbyl groups with at least 14 C-atoms, such as dihardened tallow methyl amine oxide, are particularly preferred. Amine oxides have been found to provide particularly advantageous softening effects, furthermore compositions comprising amine oxides are generally easy to prepare, are stable and have an interesting creamy appearance.

Optional ingredients

[0036] Preferably, the compositions of the present invention contain substantially no anionic material, in particular no anionic surface active material. If such materials are present, the weight ratio of the cationic fabric softening agent to the anionic material should preferably be more than 5:1.

[0037] The composition can also contain one or more optional ingredients selected from non-aqueous solvents such

as C₁-C₄ alkanols and polyhydric alcohols, pH buffering agents such as strong or weak acids eg. HCl, H₂SO₄, phosphoric, benzoic or citric acids (the pH of the liquid compositions is preferably less than 5.0), rewetting agents, viscosity modifiers such as electrolytes, for example calcium chloride, antigelling agents, perfumes, perfume carriers, fluorescenters, colourants, hydrotropes, antifoaming agents, antiredeposition agents, enzymes, optical brightening agents, opacifiers, stabilisers such as guar gum and polyethylene glycol, emulsifiers, anti-shrinking agents, anti-wrinkle agents, fabric crisping agents, anti-spotting agents, soil-release agents, germicides, linear or branched silicones, fungicides, anti-oxidants, anti-corrosion agents, preservatives such as Bronopol (Trade Mark), a commercially available form of 2-bromo-2-nitropropane-1,3-diol, dyes, bleaches and bleach precursors, drape imparting agents, antistatic agents, anti-redeposition agents, dye transfer inhibitors and ironing aids.

[0038] These optional ingredients, if added, are each present at levels up to 5% by weight of the composition. The pH of the composition is preferably 5 or below, or adjusted thereto.

[0039] Anti-redeposition agents particularly preferred in the compositions according to the invention are polymers. Suitable polymers include alkyl and hydroxyalkyl cellulose ethers, such as methyl cellulose, and polyvinylpyrrolidone.

[0040] Silicones can be included in the compositions as the ironing aid, rewetting agent or the antifoaming agent.

Suitable silicones for use in the compositions according to the invention include predominantly linear polydialkyl or alkylaryl siloxanes in which the alkyl groups contain one to five carbon atoms. The siloxanes can be amido or amino substituted. When the siloxane is amine substituted the amine group may be quaternised.

[0041] The compositions may also contain, in addition to the cationic fabric softening agent, other non-cationic fabric softening agents, such as nonionic fabric softening agents. Suitable nonionic fabric softening agents include glycerol esters, such as glycerol monostearate, fatty alcohols, such as stearyl alcohol, alkoxylated fatty alcohols C₉-C₂₄ fatty acids and lanolin and derivatives thereof. Suitable materials are disclosed in European Patent Application 88 520 (Unilever PLC/NV case C 1325), 122 141 (Unilever PLC/NV case C 1363) and 79 746 (Procter and Gamble). Typically such materials are included at a level within the range of from 0.5% to 10% by weight of the composition.

Liquid compositions

[0042] The total level of the three ingredients in a liquid composition is from 1 to 60% more preferred from 3 to 30% by weight of the composition. Based on the total weight of the three actives, the weight of the cationic softening agent is not more than 90%, preferably between 25 and 75 %, more preferred from 40 to 60 %. especially preferred about 50 %. The weight of the amine is not more than 70%, preferably between 10 and 60%, more preferred between 15 and 40 %, especially preferred about 25 %. The weight of the amphoteric material is not more than 60 %. If the amphoteric material is an amine oxide then this constitutes preferably less than 60 %, more preferred between 10 and 50 %, especially preferred between 15 and 40 %, most preferred about 25 % based on the weight of the three actives.

[0043] The optimum weight ratio of the three active components in the fabric conditioning composition depends on the level of anionic carried over from the wash cycle. We have found that a weight ratio of cationic fabric softener to amine to amine oxide of about 2:1:1 provides good results under most conditions of use.

[0044] The liquid compositions according to the inventions may be prepared by a variety of methods. One suitable method is to form a molten mixture of the cationic fabric softening agent, amine and amphoteric material, which is then added to water with stirring to form a dispersion and thereafter adding any optional ingredients.

[0045] In use, the fabric conditioning composition of the invention may be added to a large volume of water to form a liquor with which the fabrics to be treated are contacted. Generally, the total concentration of the cationic fabric softening agent, the amine and the amine oxide in this liquor will be between about 30 ppm and 500 ppm. The weight ratio of the fabrics to liquor will generally be between 40:1 and 4:1.

[0046] If the compositions of the invention are added to water which contains high levels of anionic surface active materials, a further improvement can be obtained if the compositions contain anionic scavengers such as low molecular weight cationics. Suitable materials include cationic compounds which have a solubility in water at pH 2.5 and 20°C of more than 5 g/l, preferably more than 10 g/l. Arquad 18 is a particularly preferred material. (Arquad 18 is a commercially available form of hardened tallow trimethyl ammonium chloride).

[0047] The invention will now be illustrated by the following non limiting Examples, where Examples 1A, 1B, 2A and 2B are included for comparison purposes only. In all of the Examples, all parts and percentages are by weight. Where commercially available materials are referred to, the percentages quoted are those of the active ingredient therein.

Examples 1-2

[0048] Compositions were prepared according to the formulations in the following tables. The compositions were prepared by comelting the cationic fabric softening agent, amine and amine oxide at 80°C. (When the amine was Armeen M2HT, the ortho phosphoric acid was added to the water prior to forming the co-melt. In contrast when ceranine HC39 was used, the acid was added after the components were dispersed). The comelt thus formed was added to

EP 0 332 270 B2

water at 80°C and then sonoprobed for a few minutes to form a dispersion which was then cooled to room temperature.

[0049] The compositions were tested as follows -

40 grams of cotton terry toweling were washed for 5 minutes at 50°C with a commercially available washing powder product, UK Persil Automatic, in a litre of Wirral water (10°FH) in a tergotometer. 5 grams of the washing powder product was used. After separating the wash liquor, the fabric load was rinsed twice at 25°C with Wirral water. 4ml of a test composition was added to the second rinse. After line drying, the fabric load was assessed for softness by a panel of experts using a paired comparison test.

EXAMPLE NO.	1	1A	1B	2	2A	2B
Ingredient %						
Arquad 2HT ¹	2.5	2.5	-	2.5	2.5	-
Armeen M2HT ²	1.25	-	2.5	-	-	-
DHTMAO ³	1.25	2.5	2.5	1.25	2.5	2.5
Ceranine HC39 ⁴	-	-	-	1.25	-	2.5
OPA	0.25	-	0.50	0.25	-	0.50
Water	-----balance-----					

1 - Dihardened tallow dimethyl ammonium chloride (ex Akzo)

2 - Dihardened tallow methylamine (ex Akzo)

3 - Dihardened tallow methyl amine oxide (ex Kenobel)

4 - Reaction product of two moles of hardened tallow fatty acid with one mole of N-2-hydroxyethyl ethylene diamine (ex Sandoz).

[0050] The results of the softness showed a preference for composition 1 over compositions 1A and 1B ie. the ternary system, containing the cationic, amine and amine oxide, gave the best softening. The same result was obtained when compositions 2, 2A and 2B were compared.

[0051] Compositions 1 and 2 were also compared. The results showed a preference for the product containing Ceranine HC39.

Examples 3-6

[0052] In these Examples, a comparison was made between ternary compositions in which the amine was either protonated or unprotonated. Compositions were prepared according to the formulations in the table by the method described above.

Example	3	4	5	6
Arquad 2HT	2.5	2.5	2.5	2.5
Armeen M2HT				
(i) protonated with OPA	1.25	-	-	-
(ii) not protonated	-	1.25	-	-
DHTMAO	1.25	1.25	1.25	1.25
Ceranine HC39				
(i) protonated with OPA	-	-	1.25	-
(ii) not protonated	-	-	-	1.25
OPA	0.25	-	0.25	-
Water	-----balance-----			

[0053] The compositions were tested according to the method described in Examples 1 and 2.

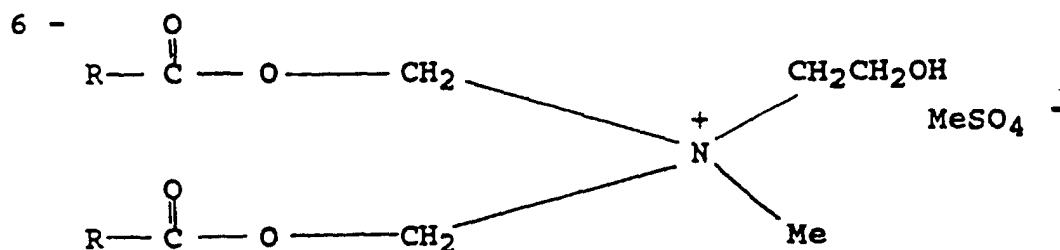
[0054] The results show a preference for composition 3 which contained a protonated amine, over composition 4.

[0055] When Ceranine HC39 was the amine used, Examples 5 and 6, compositions containing the protonated and unprotonated material, gave similar results.

EXAMPLES 7-12, 14 and 15

The following compositions according to the invention were prepared by the method described above.

Example	7	8	9	10	11	12	14	15
Arquad 2HT	3.5	3.5						
Imidazoline 2HT			2.5					
Stepantex VRH90				2.5				
Arquad 18					1.0			
Arquad 2C						0.25		
DHTMAO	0.5	1.0	1.25	1.25	0.75	1.25	1.25	3.5
C ₂₂ dimethyl amine oxide								
Imidazoline amine ⁹							1.25	
OPA	0.2	0.1	0.25	0.25	0.15	0.2		0.7
Armeen M2HT	1.0	0.5	1.75	1.25	0.75	1.0		3.5
Water							balance	



R=hardened tallow

[0057] 7 - Hardened tallow trimethyl ammonium chloride

[0058] 8 - Dicocodimethyl ammonium chloride

[0059] 9 - Dihardened tallow imidazoline amine.

Examples 16-21

[0060] The following compositions according to the invention were prepared by the method described above

Example	16	17	18	19	20	21
Arquad 2HT	7.5	6.75	7.50	8.5	7.5	5.1
Ceranine HC39	3.75	3.375	3.75	-	-	8.5
Ceranine HCA	-	-	-	4.25	3.75	-
DHTMAO	3.75	3.375	3.75	4.25	3.75	3.4
Dobanol 25-9	-	-	1.00	-	-	-
OPA	0.75	0.22	0.75	0.85	0.75	0.70
Water	-----balance-----					

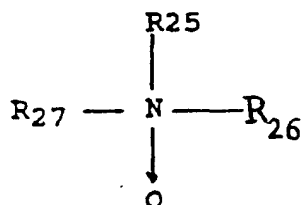
Claims

1. An aqueous liquid fabric conditioning composition comprising from 1 to 60% by weight of a combination of:

(i) 20% to 90% by weight of a cationic quaternary ammonium fabric softening agent having two C₁₂₋₂₄ hydrocarbyl chains and a solubility in water at pH2.5 and 20°C of less than 10g/l;

(ii) 5% to 70% by weight of an amine; and

(iii) 5% to 60% by weight of an amphoteric fabric conditioning material wherein said amphoteric fabric conditioning material is selected from tertiary amine oxides of the following formula:



wherein:

a) R₂₅ and R₂₆ are C₈₋₂₄ hydrocarbyl chains, R₂₇ is an hydrocarbyl group containing 1-4 carbon atoms or a group -(CH₂CH₂O)_nH and n is an integer from 1 to 6;

the percentage by weight of (i), (ii) and (iii) being based on the total weight of components (i), (ii) and (iii) in the composition.

2. A fabric conditioning composition according to claim 1, comprising based on the total weight of the three components (i) to (iii),

- (i) 40 - 60% of cationic softening agent
- (ii) 15 - 40% of amine
- (iii) 15 - 40% of amine oxide.

3. A fabric conditioning composition according to any one of claims 1 or 2, comprising 3 - 30% by weight of active material.

4. Method for treating fabrics comprising the step of contacting fabrics with an aqueous bath comprising a fabric conditioning composition according to any one of claims 1 to 3, the total concentration of the cationic fabric softening agent, the amine and the amine oxide being between 30 and 500 ppm.

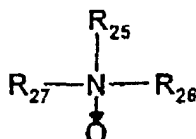
Patentansprüche

1. Wäßrige flüssige Gewebekonditionierzusammensetzung, die 1 bis 60 Gew.-% einer Kombination aus folgenden Bestandteilen umfaßt:

(i) 20 bis 90 Gew.-% eines kationischen quaternären Ammoniumgewebeerweichungsmittels mit zwei C₁₂-C₂₄-Kohlenwasserstoffketten und einer Löslichkeit in Wasser von weniger als 10 g/l bei einem pH-Wert von 2,5 und 20°C;

(ii) 5 bis 70 Gew.-% Amin und

(iii) 5 bis 60 Gew.-% eines amphoteren Gewebekonditioniermaterials, wobei das amphotere Gewebekonditioniermaterial ausgewählt wird aus tertiären Aminoxiden der folgenden Formel:



worin a) R₂₅ und R₂₆ C₈₋₂₄ Kohlenwasserstoffketten sind, R₂₇ eine Kohlenwasserstoffgruppe mit 1-4 Kohlenstoffatomen oder eine Gruppe -(CH₂CH₂O)_nH ist und n eine ganze Zahl von 1 bis 6 ist; wobei die gewichtsprozentualen Anteile von (i), (ii) und (iii) auf das Gesamtgewicht der Komponenten (i), (ii) und (iii) in der Zusammensetzung bezogen sind.

2. Gewebekonditionierzusammensetzung nach Anspruch 1, die, bezogen auf das Gesamtgewicht der drei Komponenten (i) bis (iii),

- (i) 40-60% kationisches Erweichungsmittel,
- (ii) 15-40% Amin und
- (iii) 15-40% Aminoxid umfaßt.

3. Gewebekonditionierzusammensetzung nach einem der Ansprüche 1 oder 2, die 3 bis 30 Gew.-% aktives Material umfaßt.

4. Verfahren zur Behandlung von Geweben durch Inberührungbringen der Gewebe mit einem eine Gewebekonditionierzusammensetzung nach einem der Ansprüche 1 bis 3 umfassenden wäßrigen Bad, wobei die Gesamtkonzentration an dem kationischen Gewebeerweichungsmittel, dem Amin und dem Aminoxid zwischen 300 und 500

ppm liegt.

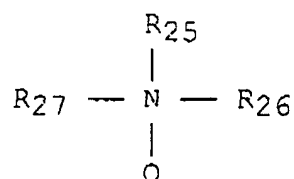
Revendications

1. Composition liquide aqueuse de conditionnement pour tissu comprenant de 1 à 60% en poids d'un mélange de:

(i) de 20% à 90% en poids d'un agent d'adoucissement pour tissu à base d'ammonium quaternaire cationique ayant deux chaînes hydrocarbyle en C_{12} à C_{24} et une solubilité dans l'eau à un pH de 2,5 et à 20°C inférieure à 10g/l:

(ii) de 5% à 70% en poids d'une amine; et

(iii) de 5% à 60% en poids d'une matière de conditionnement amphotère pour tissu dans lequel ladite matière de conditionnement amphotère pour tissu est choisie parmi des oxydes d'amines tertiaires de formule suivante:



dans laquelle :

a) R_{25} et R_{26} sont des chaînes hydrocarbyle en C_8 à C_{24} , R_{27} est un groupe hydrocarbyle contenant de 1 à 4 atomes de carbone ou un groupe $-(CH_2CH_2O)_nH$ où n est un nombre entier de 1 à 6;

le pourcentage en poids de (i), (ii) et (iii) étant fondé sur le poids total des composants (i), (ii) et (iii) dans la composition.

2. Composition de conditionnement pour tissu selon la revendication 1, comprenant, fondée sur le poids total des trois composants de (i) à (iii):

(i) de 40 à 60% d'un agent d'adoucissement cationique

(ii) de 15 à 40% d'amine

(iii) de 15 à 40% d'oxyde d'amine.

3. Composition de conditionnement pour tissu selon l'une des quelconques revendications 1 ou 2, comprenant de 3 à 30% en poids de matière active.

4. Procédé de conditionnement pour tissu comprenant l'étape consistant à mettre en contact des tissus avec un bain aqueux comprenant une composition de conditionnement pour tissu selon l'une quelconques des revendications de 1 à 3, la concentration totale en agent d'adoucissement cationique pour tissu, l'amine et l'oxyde d'amine étant comprise entre 30 et 500 ppm.