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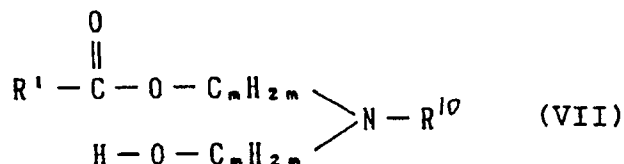
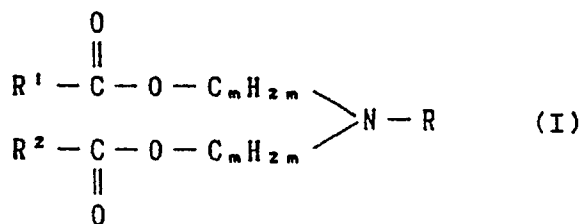
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(54) **Liquid softener composition for fabric.**

(57) The liquid softener composition is useful for the housework, improved in softening and rinsing and comprises (a) 10 to 30 percent by weight of a neutralized product of an inorganic or organic acid with an ester amine having the formula (I) or (II), having an average size of 0.1 to 5 microns in the dispersed state, (b) 0.2 to 10 percent by weight of an inorganic electrolyte and the balance of water.



in which R<sup>1</sup> and R<sup>2</sup> each are a hydrocarbon group having 11 to 23 carbon atoms, straight or branched, saturated or unsaturated, R is a hydrocarbon group having 1 to 24 carbon atoms, straight or branched, saturated or unsaturated, hydroxyethyl, hydroxypropyl, R<sup>10</sup> is a hydrocarbon group having 8 to 24 carbon atoms, straight or branched, saturated or unsaturated, and m is 2 or 3.

**EP 0 443 313 A1**

## LIQUID SOFTENER COMPOSITION FOR FABRIC

[Field of Industrial Application]

The present invention relates to a liquid softener. In particular, the present invention relates to a household liquid softener capable of imparting an excellent softness to various fibers and having an excellent dispersibility in rinsing water.

[Prior Art]

Most of household softeners now available on-the market are compositions mainly comprising a quaternary ammonium salt having 1 or 2 long-chain alkyl groups in the molecule such as di(hardened tallow alkyl)-dimethylammonium chloride, since the quaternary ammonium salt used even in a small amount exhibits an excellent softening effect on various fibers.

The softeners comprising the quaternary ammonium salt as the main base are put on the market and used usually in the form of 4 to 20% dispersion.

When the quaternary ammonium having a strong hydrophobic property is added to water and the stirring power is weak, the dispersibility thereof in water is poor and, therefore, it cannot be evenly applied to the clothes. Although commercially available softeners contain various additives in addition to the quaternary ammonium salt to improve the dispersibility thereof in water, the effects of them are yet insufficient.

Further, liquid softeners comprising an amine as the softening base have been heretofore known. For example, Japanese Patent Laid-Open No. 59796/1977 discloses a composition for softening fibers which comprises a long-chain alkylamine such as methyldi(hardened tallow alkyl)amine; JP-A 55-45898 (1980) shows that a condensate of an aliphatic acid and an alkanolamine is neutralized or quaternarized by addition of an amideamine compound to liquidify and use it as its aqueous solution. JP-A 58-60070(1983) discloses a softener for fibrous materials which comprises an acylated alkanolamine, a water-soluble quaternary ammonium salt and a fatty acid ester and which imparts a lubricity and a pleasant touch to the fibers; Japanese Patent Laid-Open No. 167083/1986 discloses a highly dispersible softener comprising a quaternary ammonium compound, a condensate of a higher fatty acid with a hydroxylated lower alkylpolyamine and an alkylamine polyglycol ether; Japanese Patent Laid-Open No. 275474/1986 discloses a stable aqueous dispersion for treating textiles which comprises a di(higher alkyl)cyclic amine and a Brönstedt acid; Japanese Patent Laid-Open No. 85368/1989 discloses a softening composition comprising a di(long-chain alkyl)amine / anionic surfactant ion pair complex, a non-silicone wax and a liquid carrier; Japanese Patent Laid-Open No. 6662/1990 discloses a composition for conditioning cloths which comprises a condensate of an amine such as a hydroxylated (lower alkyl) alkylenediamine with a higher fatty acid and an amphoteric conditioning agent for cloths; and Japanese Patent Laid-Open No. 14076/1990 discloses a composition for conditioning cloths which comprises a di(long chain)alkylamine / polyfunctional carboxylic acid complex and which is capable of imparting softness and antistatic properties to the cloths.

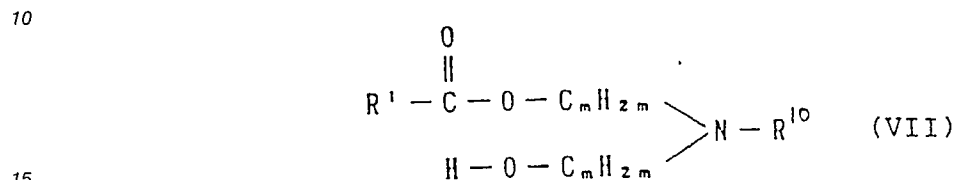
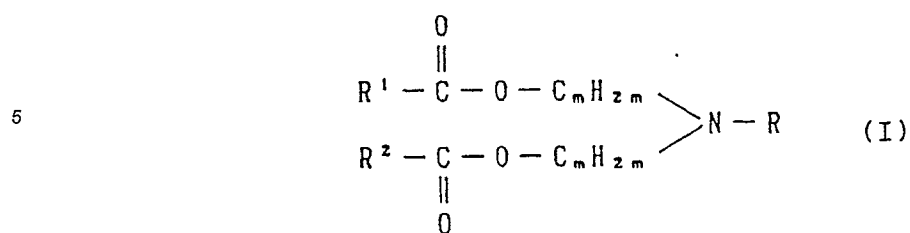
Further, Japanese Patent Laid-Open No. 5394/1977 discloses a composition for regulating the conditions of cloths which comprises a mono- or di(long chain alkyl)alkylenediamine antistatic agent and a quaternary ammonium softener.

However, the effects of the amine-containing softeners are yet insufficient.

( Summary of the invention )

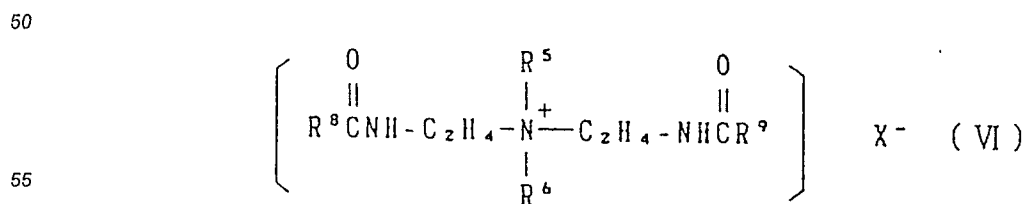
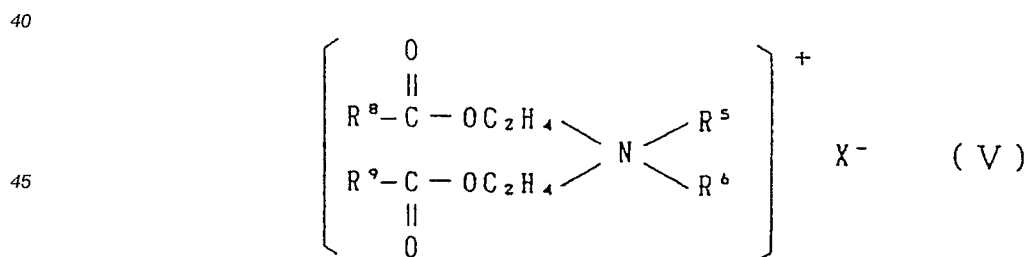
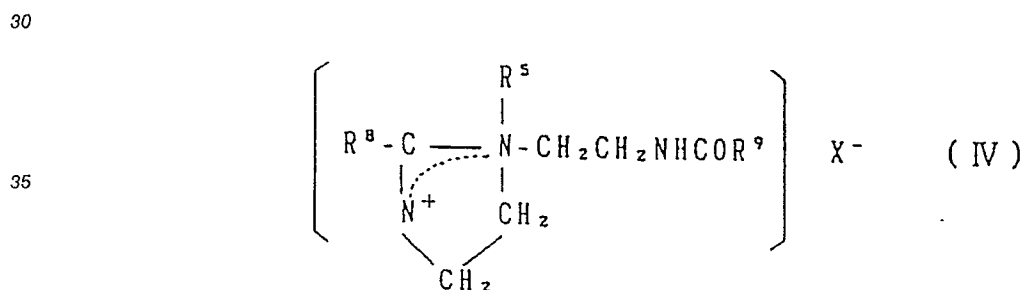
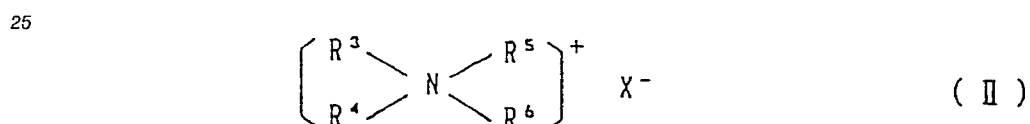
After intensive investigations of amine-containing softeners, the inventors have found that a neutralized salt of a specified esteramine compound has an excellent softening effect and a quite high dispersibility in rinsing water. The present invention has been completed on the basis of this finding.

The liquid softener composition is useful for the housework, improved in softening and rinsing and comprises (a) 10 to 30 percent by weight of a neutralized product of an inorganic or organic acid with an ester amine having the formula (I) or (II), having an average size of 0.1 to 5 microns in the dispersed state, (b) 0.2 to 10 percent by weight of an inorganic electrolyte and the balance of water.



in which R1 and R2 each are a hydrocarbon group having 11 to 23 carbon atoms, straight or branched, saturated or unsaturated, R is a hydrocarbon group having 1 to 24 carbon atoms, straight or branched, 20 saturated or unsaturated, hydroxyethyl, hydroxypropyl, R10 is a hydrocarbon group having 8 to 24 carbon atoms, straight or branched, saturated or unsaturated, and m is 2 or 3.

The composition may further comprise (c) a water-insoluble quaternary ammonium salt having one of the formulae (II), (IV), (V) and (VI) at a weight ratio of (a) to (c) in the range between 95/5 and 50/50.



in which R3, R4, R8 and R9 are each an alkyl having 10 to 24 carbon atoms, an alkenyl having 10 to 24 carbon atoms, a beta-hydroxyalkyl having 10 to 24 carbon atoms, R5 and R6 are each an alkyl having 1 to 3 carbon atoms, hydroxyalkyl having 1 to 3 carbon atoms, benzyl or  $-(C_2H_4O)_q-H$ , q being 1 to 3, X is a halogen or a monoalkyl sulfate having 1 to 3 carbon atoms in the alkyl.

5 The invention includes two embodiments, one in which the ester amine (a) has the formula (I) and the other in which the ester amine (a) has the formula (VII).

It is preferably that the inorganic acid for (a) is hydrochloric acid or sulfuric acid and the organic acid is acetic acid, glycolic acid, lactic acid, citric acid, maleic acid, fumaric acid or toluenesulfonic acid.

10 When the ester amine for (a) has the formula (I), R1 and R2 each are an alkyl having 15 to 23 carbon atoms or an alkenyl having 15 to 23 carbon atoms and R is an alkyl having 1 to 3 carbon atoms.

When the ester amine for (a) has the formula (VII), one of R1 and R10 has 16 or more carbon atoms.

It is preferable that the inorganic electrolyte is selected from the group consisting of sodium chloride, sodium bromide, calcium chloride and magnesium chloride.

15 The compound having the formulae (I) or (VII) preferably includes those obtained by reacting an alkanolamine such as N-long chain alkyl-dipropanolamine, triethanolamine, tripropanolamine, N-methyl-diethanolamine, N-methylpropanolamine or an N-(long-chain alkyl)diethanolamine with a fatty acid having 12 to 24 carbon atoms or methyl ester thereof and neutralizing the reaction product with an inorganic acid such as hydrochloric or sulfuric acid or an organic acid such as acetic, glycolic, lactic, citric, maleic, fumaric or toluenesulfonic acid. The fatty acids used in the reaction are usually those produced from natural oils and  
20 fats such as coconut oil, palm oil, beef tallow, rapeseed oil and fish oils. Further, chemically synthesized fatty acids are also usable.

The most desirable components (a) are neutralized amine compounds of the general formula (I) wherein R<sub>1</sub> and R<sub>2</sub> each represent an alkyl or alkenyl group having at least 15 carbon atoms and R represents an alkyl group having 1 to 3 carbon atoms.

25 The liquid softener composition comprises 10 to 30 wt.%, preferably 10 to 25 wt.% of (a), 0.2 to 10 wt.%, preferably 0.4 to 5 wt.%, more preferably 0.6 to 5 wt.%, based on the weight of (a), of (b) and the balance of water.

The composition of the present invention is obtained by, for example, slowly adding a melt of the amine compound or a concentrated solution thereof into an aqueous solution of the neutralizing agent under stirring or shear stirring. However, the process for producing the composition of the present invention is not  
30 limited to this and other processes wherein the neutralized product is previously produced or the neutralizing agent is added afterward can also be employed.

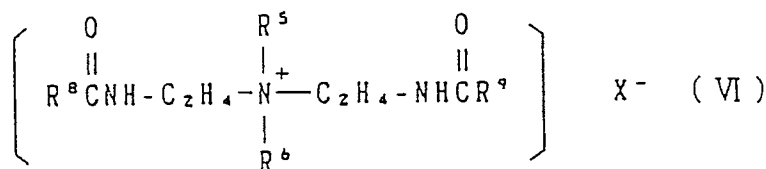
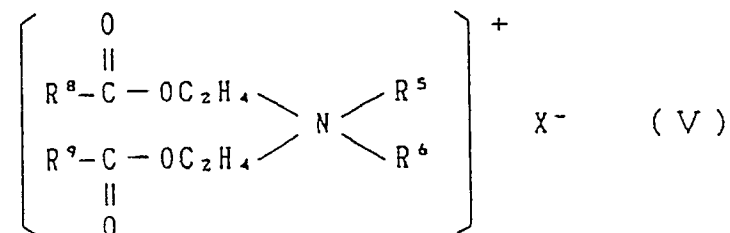
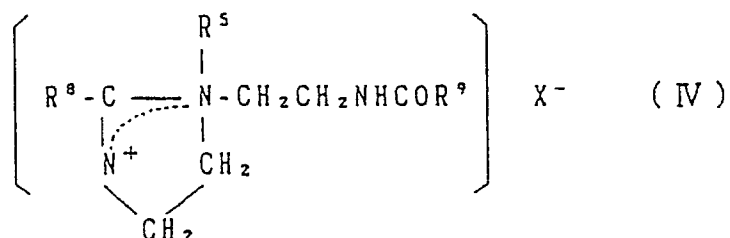
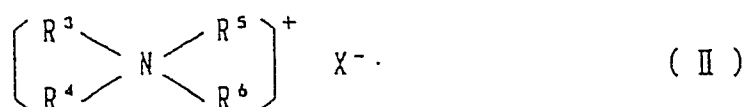
From the viewpoints of the dispersibility in water and softening effect, the preferred mean particle diameter of the component (a) is in the range of 0.1 to 5  $\mu m$ . The most desirable method of adjusting the mean particle diameter in this range comprises varying the stirring shearing force depending on the kind and amount of the component (a) in the incorporation step. When the mean particle diameter of the component (a) is less than 0.1  $\mu m$ , the softness is reduced and, on the contrary, when it exceeds 5  $\mu m$ , the dispersibility thereof in water is reduced. A preferable size of (a) ranges from 0.5 to 3 microns.

The liquid softener of the present invention may contain an ordinary quaternary ammonium salt. The  
40 quaternary ammonium salts are, for example, as follows:

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wherein  $R^3$ ,  $R^4$ ,  $R^8$  and  $R^9$  each represent an alkyl, alkenyl or  $\beta$ -hydroxyalkyl group having 10 to 24 carbon atoms,  $R^5$  and  $R^6$  each represent an alkyl or hydroxyalkyl group having 1 to 3 carbon atoms, a benzyl group or  $-(C_2H_4O)_q-H$ , wherein  $q$  represents 1 to 3, and  $X$  represents a halogen or a monoalkylsulfate group having an alkyl group having 1 to 3 carbon atoms.

Examples of the compounds of the general formula (II) include ditallowdimethylammonium chloride, ditallowdimethylammonium methyl sulfate, di(hydrogenated tallow)dimethylammonium chloride, distearyl-dimethylammonium chloride, dibehenyldimethylammonium chloride and dioleyldimethylammonium chloride.

Examples of the compounds of the general formula (IV) include 1-methyl-1-tallowamidoethyl-2-tallowimidazolinium methyl sulfate and 1-methyl-1-(hydrogenated tallow tallow amidoethyl)imidazolinium methyl sulfate.

Examples of the compounds of the general formula (V) include methylbis(tallowyloxyethyl) 2-hydroxyethyl ammonium chloride and methylbis-(stearoyloxyethyl)(2-hydroxyethyl)ammonium methyl sulfate.

Examples of the compounds of the general formula (VI) include methylbis(tallow amidoethyl)-(2-hydroxyethyl)ammonium methyl sulfate and methylbis(hydrogenated tallow amidoethyl)-(2-hydroxyethyl)-ammonium methyl sulfate.

With these quaternary ammonium salts, not only the softness but also a resilience (fluffiness) can be imparted to the clothes. The weight ratio of the component (a) to the quaternary ammonium salt is in the range of 95/5 to 50/50, preferably 90/10 to 60/40. The total weight of the component (a) and quaternary ammonium salt in the composition is preferably 10 to 30% by weight. The composition preferably has a pH of 3 to 6.

The liquid softener of the present invention may contain a nonionic surfactant such as a polyoxyethylene(5 to 50 mol)alkyl or alkenyl( $C_{12}$  to  $C_{24}$ ) ether for improving the storage stability; a solvent such as ethanol, propylene glycol or ethylene glycol; urea; a silicone such as polydimethylsiloxane,

polyether-modified silicone or amino-modified silicone for improving the water absorption; a pigment or dye for improving the appearance of the product; fluorescent brightener for increasing the whiteness of the softened clothes; and a flavor for a favorable feeling during the use or after the finish.

5 [Examples]

The following Examples will further illustrate the present invention, which by no means limit the invention.

10 The following Synthesis Example will show the process for producing neutralized amidoamine compounds used in the present invention.

Synthesis Example 1

15 119 g of N-methyldiethanolamine were added to 596 g of methyl stearate and the reaction was conducted at 140 to 160 ° C for 3 h to obtain the esteramine.

The condensate thus obtained was added to 500 g of a 12% aqueous solution of acetic acid to obtain compound (a-1) of the present invention.

Compounds (a-2) to (a-5) of the present invention listed in Table 1 were prepared in the same manner.

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Table 1: Composition of component (a)

Compound	Esteramine of general formula (I) wherein:	Neutralizing agent
a-1	$R^1 = R^2$ : stearic acid residue $R$ : methyl $m$ : 2	acetic acid
a-2	$R^1 = R^2$ : hardened tallow fatty acid residue $R$ : methyl $m$ : 2	glycolic acid
a-3	$R^1 = R^2$ : oleic acid residue $R$ : $C_{18}H_{37}$ $m$ : 2	glycolic acid
a-4	$R^1, R^2$ : mixture of hardened tallow fatty acid residue/coconut oil fatty acid residue in a ratio of 1/1 $R$ : methyl $m$ : 2	acetic acid
a-5	$R^1 = R^2$ : unhardened tallow fatty acid residue $R$ : ethyl $m$ : 3	hydrochloric acid

## Examples 1 to 13 and Comparative Example 1

The softening effect and water dispersibility of each of the compositions listed in Table 2 were evaluated by the following methods:

## &lt;Evaluation of softening effect&gt;

## (1) Method of treatment:

2 kg of commercially available cotton towels and 1 kg of commercially available acrylic jersey cloths were washed with a commercially available detergent ('Attack': registered trade name of Kao Corporation) in 3.5° DH hard water with a 30-l washing machine five times to remove textile treating agents from them. Then they were treated with 10 ml of a 15% dispersion of each of the compositions listed in Table 2 under stirring at 25° C for 1 min.

## (2) Evaluation method:

The cloths treated as described above were air-dried in a room and then left to stand in an air-conditioned room at 25 ° C and 65% RH for 24 h.

The softness of these cloths was examined.

The softness was evaluated by the paired comparison method with the cloths which had been treated with 20 ml of a softener comprising 15% by weight of di(hydrogenated tallow alkyl)-dimethylammonium chloride as the control. The results were classified into the following groups:

- +2: softer than the control
- +1: slightly softer than the control
- 0: same as the control
- 1: the control was slightly softer
- 2: the control was softer.

<Evaluation of water dispersibility>

Water was poured up to a high water level into a fully automatic washing machine ('Shizuka Gozen for Bio 65' mfd. by Hitachi, Ltd.) and the washing machine was operated (soft water whirling) for 2 min. After 5 sec, each of the compositions listed in Table 2 was thrown into the water and the dispersibility thereof was examined after 5, 10 and 30 sec. The results were classified into the following groups:

- +2: homogeneously dispersed after 5 sec
- +1: homogeneously dispersed after 10 sec
- 0: homogeneously dispersed after 30 sec
- 1: the dispersion was partially heterogeneous after 30 sec
- 2: not dispersed at all even after 30 sec.

It is apparent from Table 2 that when the compound of the present invention is used, both satisfactory softness and water dispersibility can be obtained.

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Table 2: Softening properties and water dispersibility

	Component (a)	Electrolyte		Mean particle diameter*2 ( $\mu\text{m}$ )	Properties	
		kind	amount *1		softening effect	water dispersibility
Example	1	NaCl	1.0	0.6	+1	+1
	2	CaCl <sub>2</sub>	0.6	0.8	0	+1
	3	CaCl <sub>2</sub>	1.0	0.9	0	+2
	4	CaCl <sub>2</sub>	3.0	1.2	+1	+2
	5	MgCl <sub>2</sub>	1.0	0.6	0	+1
	6	NaCl CaCl <sub>2</sub>	0.4 1.0	1.2	0	+2
	7	CaCl <sub>2</sub>	1.6	1.0	0	+2
	8	CaCl <sub>2</sub>	2.4	1.2	+1	+2
	9	MgCl <sub>2</sub>	0.5	1.0	0	+2
	10	CaCl <sub>2</sub>	0.8	0.9	0	+2
	11	CaCl <sub>2</sub>	1.4	1.1	0	+2
	12	CaCl <sub>2</sub>	1.0	1.4	+1	+2
	13	CaCl <sub>2</sub>	1.0	1.2	+1	+2
Comp. Ex.	1	quaternary ammonium salt*3	1.0	0.9	0	-1

## Notes)

- 5           \*1 Amount of electrolyte [% by weight based on the  
component (a)],
- 10          \*2 Particle diameter: determined with a light-  
scattering type particle diameter measuring  
device,
- 15          \*3 Quaternary ammonium salt: di(hardened tallow  
alkyl)dimethylammonium chloride.

The amount of the component (a) in the composition was 15% by weight.

## 20 Examples 14 to 26 and Comparative Example 2

The softening properties and water dispersibility were evaluated in the same manner as that of Examples 1 to 13 except that each of the neutralized esteramines listed in Table 3, quaternary ammonium salts listed in Table 4 and a 15% dispersion (containing 0.1% of  $\text{CaCl}_2$ ) of each of the compositions listed in  
25 Table 5 were used. The resilience was also evaluated in the evaluation of the softness.

The resilience was evaluated according to the following criteria:

- +2: more resilient than the control,  
+1: slightly more resilient than the control,  
0: similar to that of the control.  
30 -1: slightly less resilient than the control,  
-2: less resilient than the control.

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Table 3: Composition of component (a)

Compound	Esteramine of general formula (I)	Neutralizing agent
a-6	$R^1 = R^2$ : stearic acid residue $R$ : hydroxyethyl $\underline{m}$ : 2	acetic acid
a-2	$R^1 = R^2$ : hardened tallow fatty acid residue $R$ : methyl $\underline{m}$ : 2	glycolic acid
a-7	$R^1 = R^2$ : oleic acid residue $R$ : hydroxyethyl $\underline{m}$ : 2	glycolic acid
a-8	$R^1 = R^2$ : mixture of hardened tallow fatty acid residue with coconut oil fatty acid residue (1/1) $R$ : hydroxyethyl $\underline{m}$ : 2	acetic acid
a-9	$R^1 = R^2$ : unhardened tallow fatty acid residue $R$ : hydroxypropyl $\underline{m}$ : 3	hydrochloric acid

Table 4: Composition of quaternary ammonium salt

Compound	Quaternary ammonium salt
b-1	<p>general formula (II) wherein:</p> <p><math>R^3</math> and <math>R^4</math>: hardened tallow alkyl</p> <p><math>R^5</math> and <math>R^6</math>: methyl</p> <p>X : Cl</p>
b-2	<p>general formula (IV) wherein:</p> <p><math>R^8</math> and <math>R^9</math>: <math>C_{17}H_{35}</math></p> <p><math>R^5</math>: methyl</p> <p>X : <math>CH_3SO_4</math></p>
b-3	<p>general formula (V) wherein:</p> <p><math>R^8</math> and <math>R^9</math>: hardened tallow fatty acid residue</p> <p><math>R^5</math>: <math>C_2H_4OH</math></p> <p><math>R^6</math>: methyl</p> <p>X : <math>CH_3SO_4</math></p>

Table 5: Softness, resilience and water dispersibility

	Composition			Properties		
	component (a)	component (b)	ratio	softness	resilience	water dispersibility
14	a-6	b-1	80/20	0	+2	+2
15	a-6	b-1	55/45	0	+1	+1
16	a-6	b-2	80/20	0	+2	+2
17	a-6	b-3	85/15	+1	+2	+2
18	a-6	b-3	55/45	0	+1	+1
19	a-2	b-1	70/30	0	+1	+2
20	a-2	b-3	80/20	0	+2	+1
21	a-7	b-1	70/30	0	+1	+2
22	a-7	b-2	70/30	0	+1	+2
23	a-7	b-3	70/30	0	+1	+2
24	a-8	b-1	70/30	0	+2	+2
25	a-9	b-2	70/30	0	+1	+1
26	a-9	b-3	70/30	0	+1	+2
2	-	b-1	0/100	0	0	-1
Comp. Ex.						

Example

Examples 27 to 29 and Comparative Examples 3 and 4

The height of a cotton towel pile was determined for evaluating the resilience thereof treated with a 15% dispersion (containing 0.1% of  $\text{CaCl}_2$ ) of each of the compositions listed in Table 6.

<Evaluation of resilience>

Cotton towels treated in the same manner as that of Examples 14 to 26 were folded in eight, and three towels thus folded were piled. A pressure of 5 g/cm<sup>2</sup> was applied thereto for 5 min and taken away, and the

height of the pile was determined. The higher the pile, the higher the resilience.

**Table 6: Evaluation of resilience  
(height of towel pile)**

		Composition			Resilience (height of pile) (cm)
		component (a)	quaternary ammonium salt	ratio	
Example	27	a-6	b-1	70/30	9.8
	28	a-7	b-1	70/30	9.6
	29	a-9	b-2	70/30	9.6
Comp. Ex.	3	-	b-1	0/100	8.9
	4	-	b-2	0/100	8.8

#### Synthesis Example 2

Compound (a'-1) of the present invention was obtained in the same manner as in the preparation of compound (a-1) of Synthesis Example 1, except that 546 g of N-lauryldiethanolamine was used instead of 119 g of N-methyldiethanolamine. Compounds (a'-2) to (a'-5) of the present invention listed in Table 7 were prepared in the same manner as here.

Table 7: Composition of Component (a')

Compound	Esteramine of general formula (VII) wherein:	Neutralizing agent
a'- 1	R1 : stearic acid residue R10: C12H25 m : 2	acetic acid
a'- 2	R1 : hardened tallow fatty acid residue R10: C18H35 m : 2	glycolic acid
a'- 3	R1 : oleic acid residue R10: C18H37 m : 2	glycolic acid
a'- 4	R1 : hardened tallow fatty acid residue R10: C18H37 m : 2	acetic acid
a'- 5	R1 : unhardened tallow fatty acid residue R10: C18H37 m : 3	hydrochloric acid

Examples 30 to 42 and comparative Example 5

The compositions listed in Table 7 were evaluated in view of the softening effect and dispersibility in water by the same method as in the Examples 1. Results are shown in Table 8. It is noted from Table 8 that when the compound of the present invention is used, both satisfactory softness and water dispersibility can be obtained.

#### Example 43

The following composition was prepared and evaluated in the same manner as in Example 1, except that the composition comprised 12 wt.% of (a'-1), 3 wt.% of di-hardened beef tallow-dimethylammonium chloride, 0.15 wt.% of CaCl<sub>2</sub>, 0.3 wt.% of perfume and the balance of water and the mean particle diameter thereof was 1.0  $\mu$ m. The softness and the water dispersibility were found to be +1 and +2, respectively. Evaluation in elasticity, made in the same manner as in Example 27, showed that the height of pile was 9.7 cm. When the composition of the Comparative Example 5 was used, the height of pile was found to be 8.8 cm.

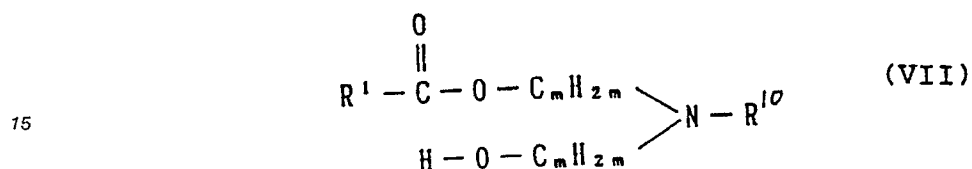
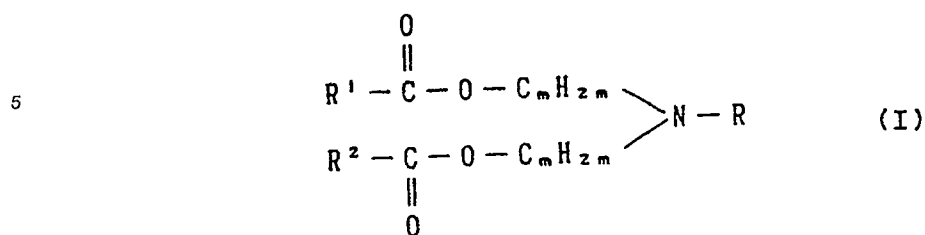
Table 8

	(a')	(b) electrolyte		average size ( $\mu\text{m}$ )	softness	dispersibility in water
30	a - 1	NaCl	1.0	0.7	0	+ 2
31	a - 1	CaCl <sub>2</sub>	0.6	1.0	+ 1	+ 1
32	a - 1	CaCl <sub>2</sub>	1.0	1.0	+ 1	+ 2
33	a - 1	CaCl <sub>2</sub>	3.0	1.2	+ 1	+ 1
34	a - 1	MgCl <sub>2</sub>	1.0	0.9	+ 1	+ 2
35	a - 2	NaCl CaCl <sub>2</sub>	0.4 1.0	1.1	0	+ 1
36	a - 2	CaCl <sub>2</sub>	1.6	1.0	0	+ 2
37	a - 2	CaCl <sub>2</sub>	2.4	1.2	+ 1	+ 1
38	a - 2	MgCl <sub>2</sub>	0.5	0.8	0	+ 2
39	a - 3	CaCl <sub>2</sub>	0.8	0.8	0	+ 2
40	a - 3	CaCl <sub>2</sub>	1.4	0.9	0	+ 1
41	a - 4	CaCl <sub>2</sub>	1.0	0.9	+ 1	+ 1
42	a - 5	CaCl <sub>2</sub>	1.0	1.0	+ 1	+ 1
5 com.	quaternary ammonium salt	CaCl <sub>2</sub>	1.0	0.9	0	- 1

## Claims

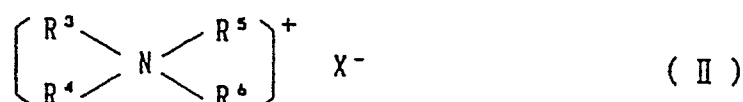
1. A liquid softener composition comprising (a) 10 to 30 percent by weight of a neutralized product of an inorganic or organic acid with an ester amine having the formula (I) or (IIV), having an average size of 0.1 to 5 microns in the dispersed state, (b) 0.2 to 10 percent by weight of an inorganic electrolyte and the balance of water.



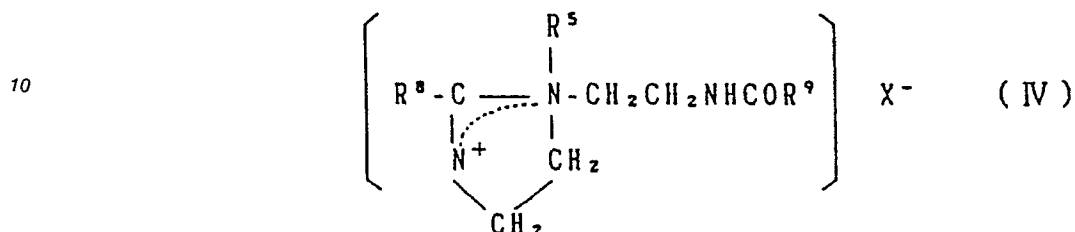


20 in which R<sup>1</sup> and R<sup>2</sup> each are a hydrocarbon group having 11 to 23 carbon atoms, straight or branched, saturated or unsaturated, R is a hydrocarbon group having 1 to 24 carbon atoms, straight or branched, saturated or unsaturated, hydroxyethyl, hydroxypropyl, R<sup>10</sup> is a hydrocarbon group having 8 to 24 carbon atoms, straight or branched, saturated or unsaturated, and m is 2 or 3.

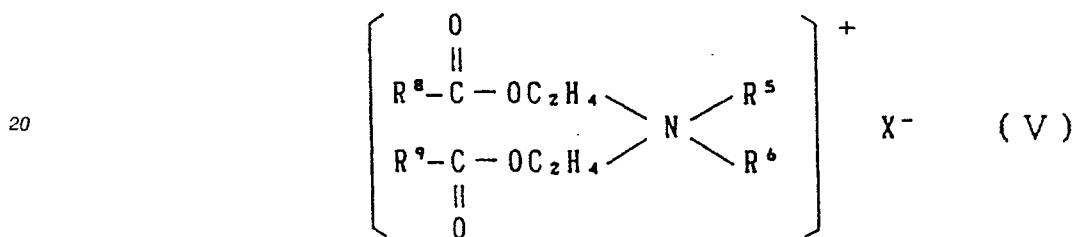
- 25 2. The composition as claimed in Claim 1, which further comprises (c) a water-insoluble quaternary ammonium salt having one of the formulae (II), (IV), (V) and (VI) at a weight ratio of (a) to (c) in the range between 95/5 and 50/50.
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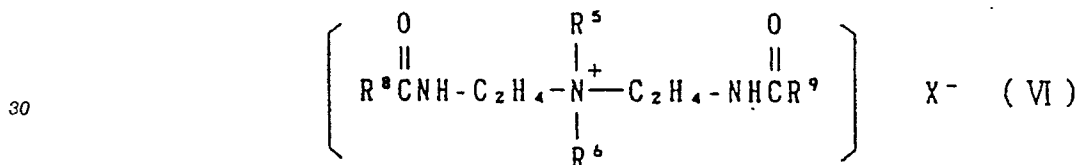


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in which R<sup>3</sup>, R<sup>4</sup>, R<sup>8</sup> and R<sup>9</sup> each are an alkyl having 10 to 24 carbon atoms, an alkenyl having 10 to 24 carbon atoms, a beta-hydroxyalkyl having 10 to 24 carbon atoms, R<sup>5</sup> and R<sup>6</sup> each are an alkyl having 1 to 3 carbon atoms, hydroxyalkyl having 1 to 3 carbon atoms, benzyl or -(C<sub>2</sub>H<sub>4</sub>O)<sub>q</sub>-H, q being 1 to 3, X is a halogen or a monoalkyl sulfate having 1 to 3 carbon atoms in the alkyl. .

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3. The composition as claimed in Claim 1, in which the ester amine (a) has the formula (I).

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4. The composition as claimed in Claim 1, in which the ester amine (a) has the formula (VII).

5. The composition as claimed in Claim 1, in which the inorganic acid for (a) is hydrochloric acid or sulfuric acid and the organic acid is acetic acid, glycolic acid, lactic acid, citric acid, maleic acid, fumaric acid or toluenesulfonic acid.

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6. The composition as claimed in Claim 1, in which the ester amine for (a) has the formula (I), R<sup>1</sup> and R<sup>2</sup> each are an alkyl having 15 to 23 carbon atoms or an alkenyl having 15 to 23 carbon atoms and R is an alkyl having 1 to 3 carbon atoms.

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7. The composition as claimed in Claim 1, in which the ester amine for (a) has the formula (VII) wherein one of R<sup>1</sup> and R<sup>10</sup> has 16 or more carbon atoms.

8. The composition as claimed in Claim 1, in which the inorganic electrolyte is selected from the group consisting of sodium chloride, sodium bromide, calcium chloride and magnesium chloride.

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# EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 91100210.3
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP - A2/A3 - 0 309 052 (THE PROCTER & GAMBLE) * Claims; page 9, line 30 - page 10, line 34 * --	1-8	D 06 M 13/46 D 06 M 13/372
X	DE - A1 - 3 904 754 (KAO) * Claims *	1-8	
Y	DE - A - 2 163 003 (KAO) * Claims 1,2 *	1,2	
D,A	EP - A2/A3 - 0 332 270 (UNILEVER) * Page 3, line 5 - page 6, line 20 * & JP-A-6662/1990 ----	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			D 06 M C 11 D
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 06-05-1991	Examiner SCHÄFER
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	