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(54) **Fabric softening composition.**

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Description

The present invention relates to fabric softening compositions suitable for softening fabrics in the rinse step of a fabric laundry process.

It has been proposed in DE 33 12 328 (BENCKISER) to prepare fabric softening compositions comprising a combination of fabric softening materials and organic acids, in specific polycarboxylic acids. The compositions as disclosed in this document, however, are of low active levels of up to about 10% by weight. These compositions of low active level are of lamellar structure, wherein the molecules of the fabric softening material form an onion-like configuration comprising concentric bilayers of softening material, between which is trapped an aqueous phase containing the dissolved acid ingredient. By increasing the active level of these formulations, an onset of instability and/or gel formation is observed when the active level exceeds a certain critical level of about 13% by weight of the composition. Therefore up till now it was believed to be impossible to formulate stable fabric softening compositions containing high levels of fabric softening materials in combination with organic acids.

Surprisingly, it has now been found that by further increasing the active level of these compositions, a second class of stable liquid softening compositions can be made. These compositions, unexpectedly are isotropic, they do not comprise a structure of active ingredients. These isotropic compositions are preferred over lamellar compositions in that they are more resistant to temperature fluctuations, and they allow a more flexible use of ingredients.

US-A-4,060,505 discloses a stable homogeneous liquid composition for souring and softening textiles, containing 0.5-25% by weight of a fatty amide softening agent of a specific structural formula and 7.5-75% by weight of a water soluble organic carboxylic acid containing about 1-20 carbon atoms. In its examples, liquid compositions are prepared containing 1.3% by weight of a fatty amide softening agent.

US-A-3,984,335 discloses a stable homogeneous liquid composition for souring and softening textiles, which includes about 0.5-25% by weight of a fatty amide softening agent and about 7.5-75% of a water soluble organic carboxylic acid. In the specific examples quoted, liquid compositions are prepared containing 1.3% and 3% by weight of softening agent.

EP-A-0,043,622 describes a concentrated fabricsoftening composition comprising a water-insoluble cationic softener and a viscosity regulator system. The viscosity regulator system includes two components, the first of which may be a C_{10}-C_{24} fatty acid or ester thereof. The softener is present in a concentration of between 8 and 22%, and the first regulator component in a concentration of between 0.5 and 6%. Of the Examples quoted in this document, only one contains a fatty acid (stearic acid), at a concentration of 2%.

EP-A-0,123,999 describes aqueous, free-flowing concentrates containing a fabric-softening quaternary ammonium compound and an alkali metal soap or the corresponding fatty acid (typically a C_8- C_{20} acid). The claims of the document refer to a softener concentration of at least 30 weight percent. Typical fatty acid concentrations are said to be between 1 and 10 weight percent. In the Examples quoted, fatty acid concentrations of 3% are used.

US-A-3,954,630 discloses a fabric treating composition including a cationic fabric softening agent and an organic "complexing acid". The document relates to the use of such a composition during a rinse cycle treatment, the composition upon dilution containing between 0.01 and 0.1% by weight of the softening agent and between 0.01 and 0.1% by weight of the complexing acid. In its concentrated form, the composition contains from 0 to 25% by weight of the softener.

EP-A-0,346,634 is prior art under Article 54(3) and (4) EPC, for the purposes of Spain only. It describes a liquid laundry-conditioning agent containing, as a fabric softener, a quaternary ammonium compound having two 2-acyloxyalkyl groups. The agent also contains a (typically C_8 - C_{24}) fatty acid. The softener is present at a concentration of between 1.5 and 27 weight percent, and the fatty acid at a concentration of between 0.5 and 10 weight percent.

EP-A-0,387,064 also represents prior art for the purposes of Article 54(3) and (4) EPC only, for all states designated in the present application. It discloses a liquid fabric conditioner composition comprising an aqueous base, a cationic fabric softening material and ethylene glycol distearate. The composition may also include a fatty acid material, preferably a C_8 - C_{24} acid material. In the Examples quoted, the concentration of softener material ranges from 4.8 to 5.2% while a fatty acid is present at a concentration of 0.5 weight percent.

Accordingly, the present invention relates to isotropic liquid fabric softening compositions comprising

(i) between 30 and 50% by weight of a fabric softening material; and

(ii) between 5 and 40% by weight of an organic acid.

Preferably the isotropic compositions of the present invention are clear or translucent. Softening compositions which are clear are sometimes particularly appreciated by the consumer, because of their

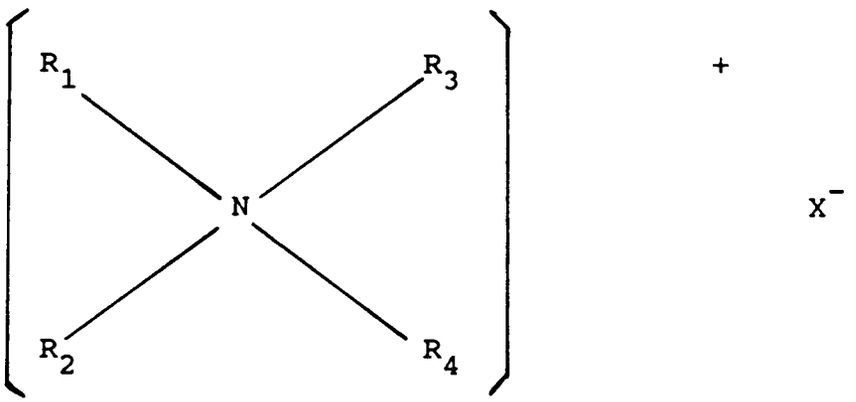
fresh and natural appearance. Clear compositions can be made by ensuring that all ingredients of the composition are completely dissolved in the liquid phase.

The fabric softening material

Compositions according to the invention contain 30 to 50% by weight of a fabric softening material. This material may be selected from cationic, nonionic and amphoteric softening materials, and mixtures thereof.

Suitable cationic fabric softener materials include water-insoluble cationic materials having a solubility in water at pH 2.5 and 20 °C of less than 10g/l. Highly preferred materials are cationic quaternary ammonium salts having two C_{12-14} hydrocarbyl chains.

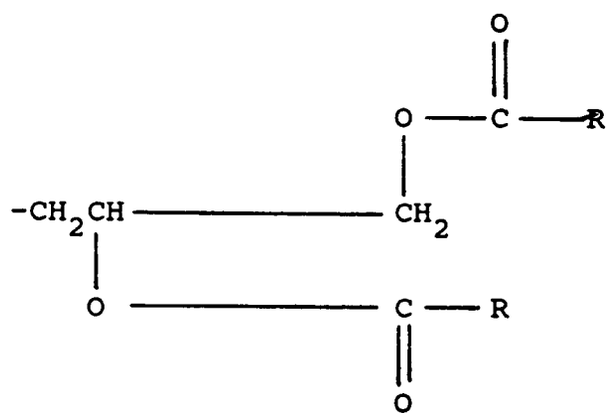
Well-known species of substantially water-insoluble quaternary ammonium compounds have the formula



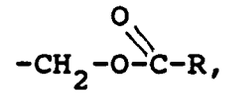
wherein R_1 and R_2 represent hydrocarbyl groups from about 12 to about 24 carbon atoms; R_3 and R_4 represent hydrocarbyl groups containing from 1 to about 4 carbon atoms; and X is an anion, preferably selected from halide, methyl sulfate and ethyl sulfate radicals.

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 methosulfate are preferred.

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 or R_2 is methyl,
R_3 and R_4 each represent



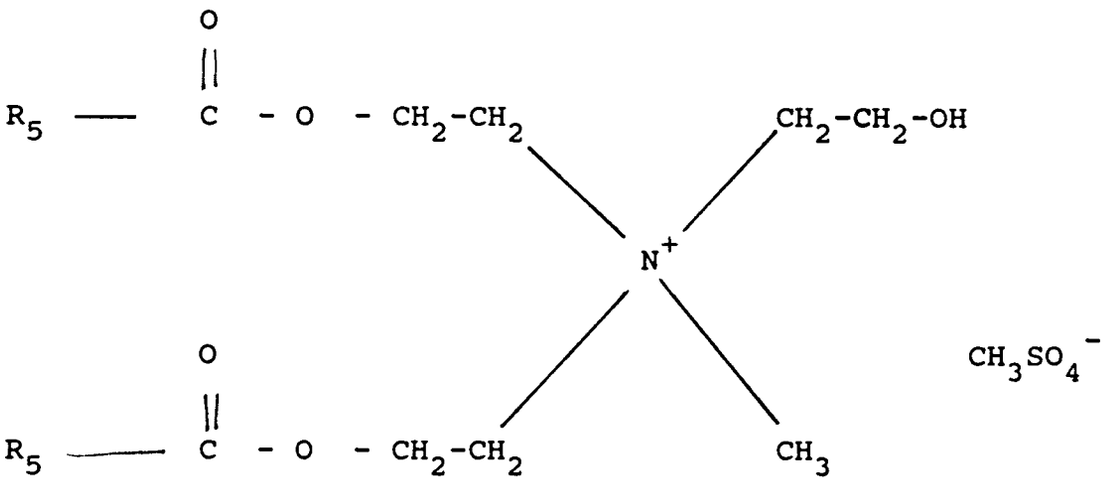
where R is hardened tallow, R_1 is CH_2CH_2OH and X is methosulphate are also suitable.

Preferably cationic softeners are used which have an active melting point (transition from Lb to L state) of less than 25 °C, more preferred less than 20 °C. Examples of these materials are di-unhardened-tallow dimethyl ammonium chloride and di coconut dimethyl ammonium chloride.

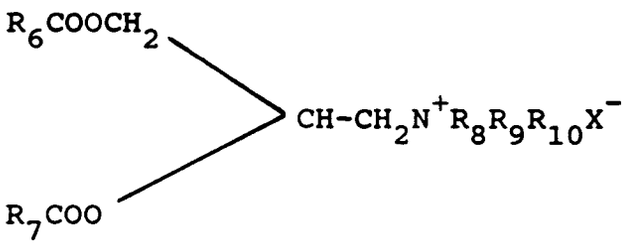
Other preferred cationic compounds include those materials as disclosed in EP 239,910 (P&G), which is included herein by reference.

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.

Other preferred materials are the materials of formula

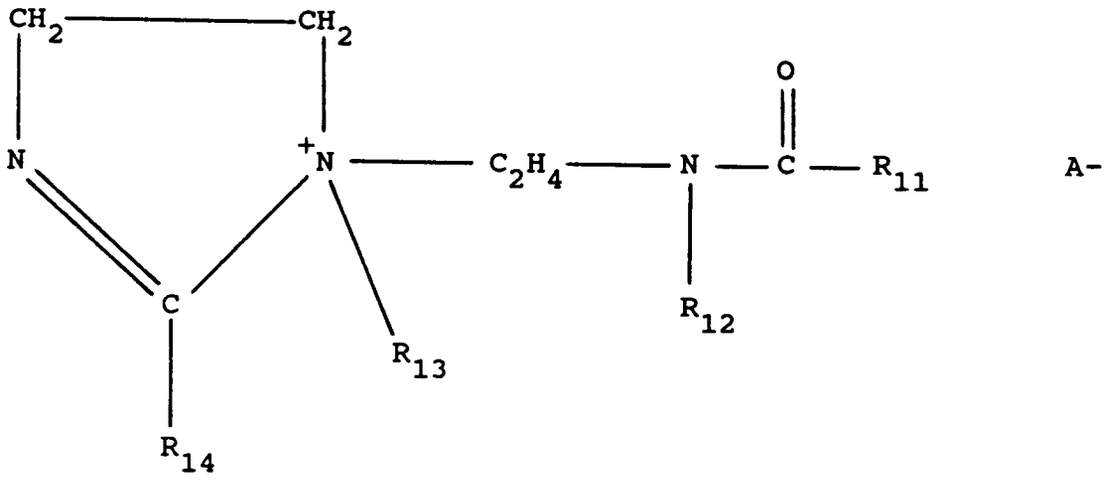


R_5 being talow, which is available from Stepan under the tradename Stepantex VRH 90 and



where R_8, R_9 and R_{10} are each alkyl or hydroxyalkyl groups containing from 1 to 4 carbon atoms, or a benzyl group. R_6 and R_7 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.

Another class of preferred water-insoluble cationic materials are the hydrocarbylimidazolinium salts believed to have the formula:



wherein R_{13} is a hydrocarbyl group containing from 1 to 4, preferably 1 or 2 carbon atoms, R_{11} is a hydrocarbyl group containing from 8 to 25 carbon atoms, R_{14} is an hydrocarbyl group containing from 8 to 25 carbon atoms and R_{12} is hydrogen or an hydrocarbyl containing from 1 to 4 carbon atoms and A- is an anion, preferably a halide, methosulfate or ethosulfate.

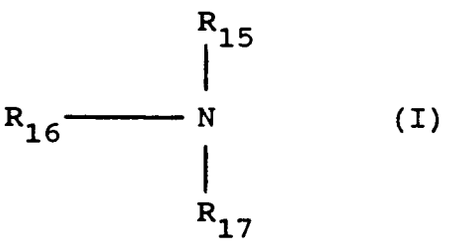
Preferred imidazolinium salts include 1-methyl-1-(tallowylamido-) ethyl -2-tallowyl-4,5-dihydro imidazolinium methosulfate and 1-methyl-1-(palmitoylamido) ethyl -2-octadecyl-4,5-dihydroimidazolinium chloride. Other useful imidazolinium materials are 2-heptadecyl-1-methyl-1- (2-stearylamido)ethyl-imidazolinium 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.

Representative commercially available materials of the above classes are the quaternary ammonium compounds Arquad 2HT (ex AKZO); Noramium M2SH (ex CEKA); Aliquat-2HT (Trade Mark of General Mills Inc), Stepantex Q185 (ex Stepan); Stepantex VP85 (ex Stepan); Stepantex 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 fabric softening materials may also comprise instead of or in addition to cationic fabric softening agents, one or more amines.

The term "amine" as used herein can refer to

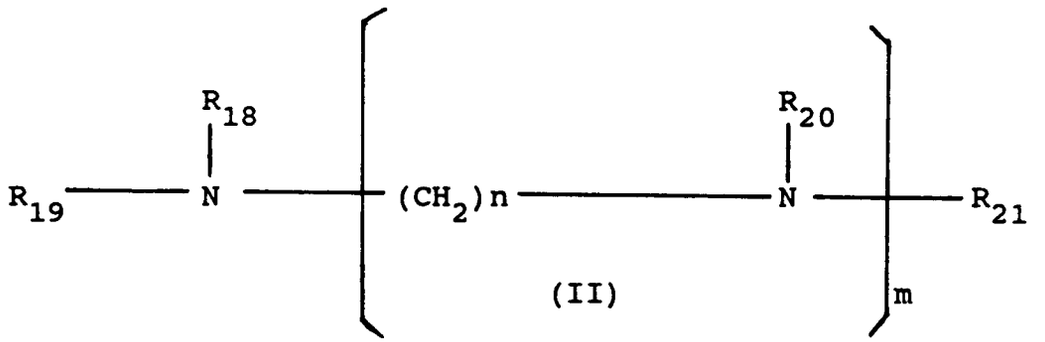
(i) amines of formula



(I)

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

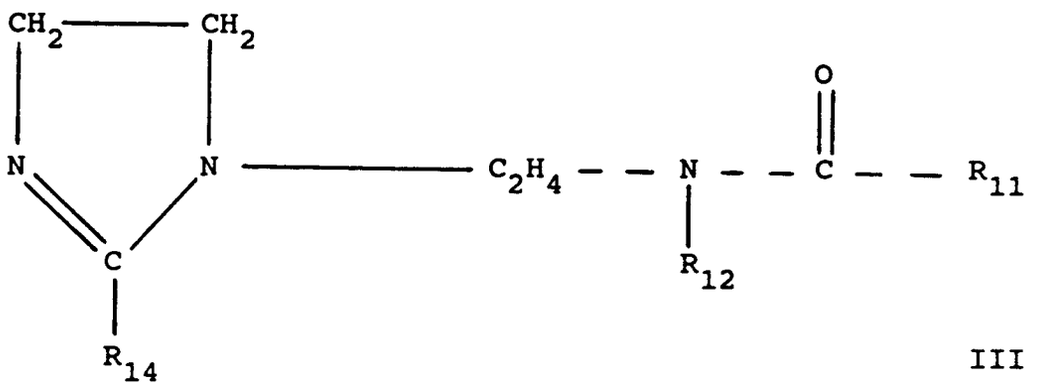
(ii) amines of formula



(II)

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

(iii)imidazolines of formula



III

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), incorporated herein by reference.

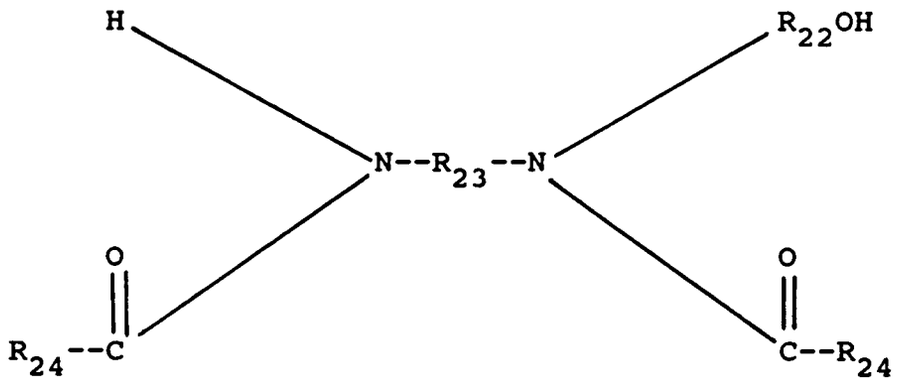
When the amine is of the formula I above, R_{15} is a C_6 to C_{24}, hydrocarbyl group, R_{16} is a C_1 to C_{24} hydrocarbyl group and R_{17} is a C_1 to C_{10} hydrocarbyl group. Suitable amines include those materials from which the quaternary ammonium compounds disclosed above are derived, in which 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_{12} 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.

When the amine is of formula II above, R_{18} is a C_6 to C_{24} hydrocarbyl group, R_{19} is an alkoxylated group of formula $-(CH_2CH_2O)_yH$, where y is within the range from 0 to 6, R_{20} is an a 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 13. 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 y and z is within the range from 3 to 10.

Representative commercially available materials of this class include Ethomeen (ex Armour) and Ethoduomeen (ex Armour).

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

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



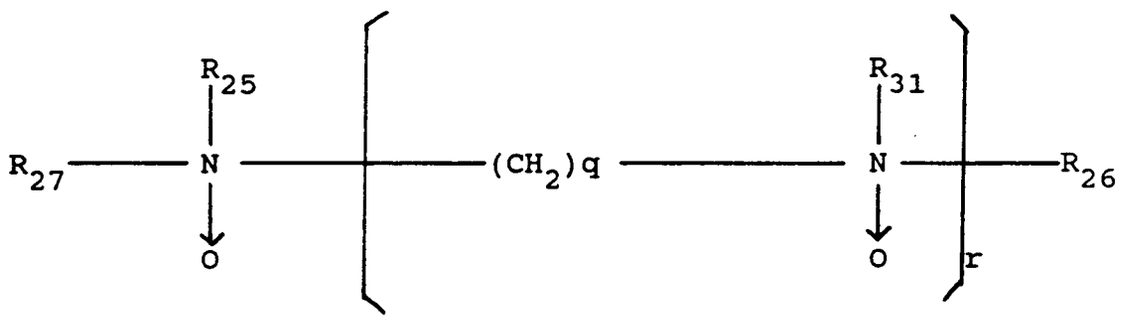
where R_{22} and R_{23} are divalent alkenyl chains having from 1 to 3 carbons atoms, and R_{24} is an acyclic aliphatic hydrocarbon chain having from 15 to 21 carbon atoms. A commercially available material of this class is Ceranine HC39 (ex Sandoz).

Alkoxylated fatty amides or amines may also be used as fabric softening materials in compositions of the invention. Suitable materials are for instance disclosed in EP 159 921 (Unilever) and EP 159 919 (Unilever). The fabric softening material may also comprise instead of or in addition to the above mentioned softening materials one or more fabric substantive amphoteric fabric softening materials. Suitable amphoteric materials form a particulate dispersion at a concentration of less than 1g/l at least one temperature between 0 and 100 °C. For the purpose of this invention a fabric substantive amphoteric material is preferably an amphoteric or zwitterionic tertiary or quaternary ammonium compound having either one single very long hydrocarbyl side chain or two long hydrocarbyl chains. From these compounds the use of amphoteric or zwitterionics ammonium compounds having two long hydrocarbyl chains is particularly preferred for many reasons including costs, ease of processing and better stability and performance.

Amphoteric or zwitterionic ammonium compounds preferably have two long hydrocarbyl chains, each chain having 8-24 C-atoms, preferably 10-20 C-atoms, most preferred around 16 C-atoms.

Suitable amphoteric fabric substantive materials for use in a fabric treatment composition according to the invention are for instance: ampholytes, hydrocarbyl betaines, hydrocarbylamide betaines, glycinates, propionates and tertiary amine oxides. These materials are described in our co-pending patent application EP-0,332,270.

Particularly preferred amphoteric softening materials are tertiary amine oxides of the following formula



wherein:

a) R_{25} and R_{26} are C_{8-25} hydrocarbyl chains, R_{27} is an hydrocarbyl group containing 1-4 carbon atoms or a group $-(CH_2,CH_2O)_nH$, R_{31} is R_{27} and r is 0 or 1; and n is an integer from 1 to 6;

or

b) R_{25} is a C_{16-50} hydrocarbyl chain, R_{26}, R_{27} are hydrocarbyl groups containing 1-4 carbon atoms or a group $-(CH_2CH_2O)_nH-$, R_{31} is R_{27} and r is 0 or 1; and n is an integer from 1 to 6.

Preferably the amphoteric fabric substantive materials are water soluble and have a solubility in water at pH 2.5 at 20 °C of less than 10g/l.

The HLB of the amphoteric fabric substantive material is preferably less than 10.0.

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

The compositions may also contain, instead of or in addition to the above mentioned fabric softening agents, non-cationic fabric softening agents, such as nonionic fabric softening agents. Suitable nonionic fabric softening agents, include glycerol esters, such as glycerol mono-stearate, fatty alcohols, such as stearyl alcohol, alkoxylated fatty alcohols C_9-C_{24} fatty acids such as Dobanol 91-6 (SHELL) and lanolin and derivatives thereof. Suitable materials are disclosed in European Patent Application 88 520 (Unilever PLC/NV case C1325), 122 141 (Unilever PLC/NV case C1363) and 79 746 (Procter and Gamble), the disclosure of which are incorporated herein by reference.

Preferably compositions of the invention contain at least some cationic fabric softening materials. Preferably at least 50% of the fabric softening material is a cationic fabric softener material.

The total level of softening material is comprised between 30 and 50% by weight, preferably between 35 and 50% by weight, typically between 40 and 50% by weight of the composition.

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.

The organic acid material

The organic acid material for use in compositions of the present invention may be selected from the group of mono-, di-, tri- or polycarboxylic acids preferably having a total number of carbon atoms of 8 or less, preferably 4 or less.

Examples of suitable organic acid materials are succinic acid, malic acid, tartaric acid, citric acid, glutaric acid, acetic acid, propionic acid, and lactic acid or mixtures thereof. For obtaining stable products within a wide range of concentrations, the use of lactic acid and acetic acid is preferred. For obtaining products with a particularly interesting appearance and good colour stability it is preferred to use citric acid.

The level of acid material in the composition (calculated on an anhydrous basis) of the acid material, is comprised between 5 and 40% by weight, preferably between 10 and 40% by weight, typically between 15% and 35% by weight of the composition.

Optional ingredients

The composition can also contain one or more optional ingredients selected from non-aqueous solvents such as C_1-C_4 alkanols and polyhydric alcohols, pH buffering agents, rewetting agents, viscosity modifiers such as electrolytes, for example calcium chloride, antigelling agents, perfumes, perfume carriers, fluorescers, colourants, hydrotropes, antifoaming agents, hydrocarbons, antiredeposition agents, enzymes, optical brightening agents, opacifiers, stabilisers such as guar gum and polyethylene glycol, emulsifiers, anti-shrinking agents, lanolin or lanolin like materials, 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 and ironing aids.

These optional ingredients, if added, are each present at levels up to 5% by weight of the composition, except for the hydrocarbons and the non-aqueous solvents which may be included at levels of up to 30%. The pH of the composition is preferably below the pK of the organic acid, more preferred at least one unit below the pK, typically between 2.0 and 5.0.

Soil-release 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 polyvinyl-pyrrolidone.

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.

Fatty acid materials or other nonionic extenders can also be included in compositions of the present invention. Suitable materials and their amounts are for instance disclosed in EP 13780 (P&G) and DE 29 43 606 (Unilever).

The balance of the composition is preferably water. Although water-free systems are also within the ambit of the invention, preferably the amount of water in the composition is more than 20% by weight, more preferred more than 25% by weight. Generally the water level will be less than 70%, more preferred less than 60%, most preferred less than 55%, typically between 55% and 25%.

The viscosity of the product is preferably less than 250 mPas at 106 s-1.

In use compositions of the present invention may be prediluted or dosed in concentrated form into the rinse-cycle of a fabric washing process. Preferably the material is used at a concentration of between 0.01 and 2g/l, especially between 0.1 and 1g/l.

The invention will be further illustrated by means of the following examples:

Example I

Fabric softening compositions containing water, tartaric acid (on a dry basis) and a cationic fabric softening material Prapagen 3445 (70% di-unhardened tallow di-methyl ammonium chloride 20% isopropylalcohol, 10% water) were prepared by mixing under light agitation.

For each composition the structure and appearance were assessed, the results are given in table 1, and graphically expressed in figure 1.

COMPOSITION	WATER/PRAPAGEN/TARTARIC (%)	RESULT
1.	80/10/10	lamellar/milky
2.	70/10/20	lamellar/milky
3.	60/10/30	lamellar/milky
4.	50/10/40	lamellar/milky
5.	40/10/50	gel
6.	70/20/10	gel
7.	60/20/20	gel
8.	50/20/30	gel
9.	40/20/40	gel
10.	60/30/10	gel
11.	50/30/20	gel
12.	40/30/30	isotropic/clear
13.	30/30/40	phase separation
14.	50/40/10	gel
15.	40/40/20	isotropic/clear
16.	30/40/30	phase separation
17.	20/40/40	phase separation
18.	40/50/10	isotropic/clear
19.	30/50/20	isotropic/clear (some phase separation)

These examples clearly show that lamellar/milky products are formed at low active concentrations; by increasing the active level, unacceptable gelled products are obtained, but surprisingly by further increasing the active levels isotropic/clear compositions can be obtained (compoisitions 12, 15, 18 and 19 according to the present invention).

Example II

Example 1 was repeated while tartaric acid was replaced by citric acid. The results are expressed in table 1 and figure 2.

COMPOSITION	WATER/PRAPAGEN/CITRIC (%)	RESULT
20.	80/10/10	lamellar/milky
21.	70/10/20	lamellar/milky
22.	60/10/30	lamellar/milky
23.	50/10/40	gel
24.	70/20/10	gel
25.	60/20/20	gel
26.	50/20/30	gel
27.	40/20/40	gel
28.	60/30/10	gel
29.	50/30/20	gel
30.	40/30/30	isotropic/clear
31.	30/30/40	phase separation
32.	50/40/10	isotropic/clear
33.	40/40/20	isotropic/clear
34.	30/40/30	isotropic/clear
35.	40/50/10	phase separation
36.	30/50/20	phase separation

Again, surprisingly isotropic liquids according to the invention (Compositions 30, 32, 33, 34) can be formulated by increasing the level of fabric softening materials. Especially interesting was the clear natural yellow appearance of the product, no decolouration was observed during storage.

EXAMPLE III

Example I was repeated while replacing tartaric acid by acetic acid or by lactic acid.

By using acetic acid isotropic/clear compositions could be formulated even at levels of PRAPAGEN of 50% or more. At lower concentrations a similar behaviour as observed for tartaric acid was observed: lamellar systems at low concentrations, and gelled systems at intermediate concentrations of softening material.

By using lactic acid, similar results as with acetic acid are observed. This indicates that for stability reasons, especially at high levels of softening materials the use of acetic acid and lactic acid is preferred.

EXAMPLE IV

By replacing tartaric acid by propionic acid isotropic/clear compositions can be formulated even at levels of acid as low as 5%. Typical formulations are:

	Formulation % by weight			
	A	B	C	D
Arquad 2T	40	40	40	40
Isopropylalcohol	0	5	11	0
Propylene glycol	10	10	10	0
Propionic acid	10	10	5	30
Water	- - - - balance - - - - - -			

Claims

Claims for the following Contracting States : CH, DE, FR, GB, IT, LI, NL, SE

1. An isotropic liquid fabric softening composition comprising:
(i) between 30 and 50% by weight of a fabric softening material; and
(ii) between 5% and 40% by weight of an organic acid.

2. Composition according to claim 1, having a clear appearance.

3. Composition according to one or more of the preceding claims, wherein the fabric softening material comprises a cationic fabric softening material.

4. Composition according to one or more of the preceding claims, wherein the organic acid is a carboxylic acid having a total number of carbon atoms of 8 or less.

5. Composition according to claim 4, wherein the organic acid has a total number of carbon atoms of 4 or less.

6. Composition according to claim 4, wherein the organic acid comprises propionic acid.

7. Composition according to claim 4, wherein the acid comprises lactic acid or acetic acid.

8. Composition according to one or more of the preceding claims, comprising at least 10% by weight of organic acid.

9. Composition according to one or more of the preceeding claims comprising at least 20% by weight of water.

10. Method of treating fabric, comprising the contacting of fabrics with an aqueous liquor comprising from 0.01 to 2g/l of a composition according to one or more of the preceeding claims.

Claims for the following Contracting State : ES

1. An isotropic liquid fabric softening composition comprising:
   (i) between 30% and 50% by weight of a fabric softening material; and
   (ii) between 5% and 40% by weight of an organic acid.

2. Composition according to claim 1, having a clear appearance.

3. Composition according to one or more of the preceding claims, wherein the fabric softening material comprises a cationic fabric softening material.

4. Composition according to one or more of the preceding claims, wherein the organic acid is a carboxylic acid having a total number of carbon atoms of 8 or less.

5. Composition according to claim 4, wherein the organic acid has a total number of carbon atoms of 4 or less.

6. Composition according to claim 4, wherein the organic acid comprises propionic acid, lactic acid or acetic acid.

7. Composition according to one or more of the preceding claims, comprising at least 10% by weight of organic acid.

8. Composition according to one or more of the preceding claims comprising at least 20% by weight of water.

9. A method for the preparation of an isotropic liquid fabric softening composition, the method comprising combining together:
   (ii) between 30% and 50% by weight of a fabric softening material; and
   (ii) between 5% and 40% by weight of an organic acid.

10. Method of treating fabric, comprising contacting the fabric with an aqueous liquor comprising from 0.01 to 2g/l of a composition according to one or more of claims 1-8.

Patentansprüche

Patentansprüche für folgende Vertragsstaaten : CH, DE, FR, GB, IT, LI, NL, SE

1. Isotropes, flüssiges, textilweichmachendes Mittel, umfassend:
   (i) zwischen 30 und 50 Gew.-% eines textilweichmachenden Materials; und
   (ii) zwischen 5 und 40 Gew.-% einer organischen Säure.

2. Mittel nach Anspruch 1, mit durchsichtigem Aussehen.

3. Mittel nach einem oder mehreren der vorangehenden Ansprüche, wobei das textilweichmachende Material ein kationisches textilweichmachendes Material umfaßt.

4. Mittel nach einem oder mehreren der vorangehenden Ansprüche, wobei die organische Säure eine Carbonsäure mit einer Gesamtzahl an Kohlenstoffatomen von 8 oder weniger ist.

5. Mittel nach Anspruch 4, wobei die organische Säure eine Gesamtzahl an Kohlenstoffatomen von 4 oder weniger aufweist.

6. Mittel nach Anspruch 4, wobei die organische Säure Propionsäure umfaßt.

7. Mittel nach Anspruch 4, wobei die Säure Milchsäure oder Essigsäure umfaßt.

8. Mittel nach einem oder mehreren der vorangehenden Ansprüche, umfassend mindestens 10 Gew.-% organischer Säure.

9. Mittel nach einem oder mehreren der vorangehenden Ansprüche, umfassend mindestens 20 Gew.-% Wasser.

10. Verfahren zur Behandlung von Textilien, umfassend das Inkontaktbringen von Textilien mit einer wässerigen Lauge, die 0,01 bis 2 g/l eines Mittels nach einem oder mehreren der vorangehenden Ansprüche umfaßt.

Patentansprüche für folgenden Vertragsstaat : ES

1. Isotropes, flüssiges, textilweichmachendes Mittel, umfassend:
   (i) zwischen 30 und 50 Gew.-% eines textilweichmachenden Materials; und
   (ii) zwischen 5 und 40 Gew.-% einer organischen Säure.

2. Mittel nach Anspruch 1, mit durchsichtigem Aussehen.

3. Mittel nach einem oder mehreren der vorangehenden Ansprüche, wobei das textilweichmachende Material ein kationisches textilweichmachendes Material umfaßt.

4. Mittel nach einem oder mehreren der vorangehenden Ansprüche, wobei die organische Säure eine Carbonsäure mit einer Gesamtzahl an Kohlenstoffatomen von 8 oder weniger ist.

5. Mittel nach Anspruch 4, wobei die organische Säure eine Gesamtzahl an Kohlenstoffatomen von 4 oder weniger aufweist.

6. Mittel nach Anspruch 4, wobei die organische Säure Propionsäure, Milchsäure oder Essigsäure umfaßt.

7. Mittel nach einem oder mehreren der vorangehenden Ansprüche, umfassend mindestens 10 Gew.-% organischer Säure.

8. Mittel nach einem oder mehreren der vorangehenden Ansprüche, umfassend mindestens 20 Gew.-% Wasser.

9. Verfahren zur Herstellung eines isotropen, flüssigen, textilweichmachenden Mittels, wobei das Verfahren das Vereinigen von:
   (i) zwischen 30 und 50 Gew.-% eines textilweichmachenden Materials; und
   (ii) zwischen 5 und 40 Gew.-% einer organischen Säure umfaßt.

10. Verfahren zur Behandlung von Textilien, umfassend das Inkontaktbringen von Textilien mit wässeriger Lauge, die 0,01 bis 2 g/l eines Mittels nach einem oder mehreren der Ansprüche 1 bis 8 umfaßt.

Revendications

Revendications pour les Etats contractants suivants : CH, DE, FR, GB, IT, LI, NL, SE

1. Composition liquide isotrope adoucissante textile qui comprend :
   (i) de 30 à 50% en poids d'une matière adoucissante textile ; et
   (ii) de 5 à 40% en poids d'un acide organique.

2. Composition selon la revendication 1, dont l'aspect est limpide.

3. Composition selon la revendication 1 ou 2, dans laquelle la matière adoucissante textile comprend une matière cationique adoucissante textile.

4. Composition selon une ou plusieurs des revendications précédentes, dans laquelle l'acide organique est un acide carboxylique ayant au total 8 atomes de carbone ou moins.

5. Composition selon la revendication 4, dans laquelle l'acide organique contient au total 4 atomes de carbone ou moins.

6. Composition selon la revendication 4, dans laquelle l'acide organique comprend l'acide propionique.

7. Composition selon la revendication 4, dans laquelle l'acide comprend l'acide lactique ou l'acide acétique.

8. Composition selon une ou plusieurs des revendications précédentes, qui comprend au moins 10% en poids d'acide organique.

9. Composition selon l'une ou plusieurs des revendications précédentes, qui comprend au moins 20% en poids d'eau.

10. Procédé de traitement du linge qui consiste à mettre en contact le linge avec une liqueur aqueuse comprenant de 0,01 à 2 g/l d'une composition selon l'une ou plusieurs des revendications précédentes.

Revendications pour l'Etat contractant suivant : ES

1. Composition liquide isotrope adoucissante textile, qui comprend :
   (i) de 30 à 50% en poids d'une matière adoucissante textile ; et
   (ii) de 5 à 40% en poids d'un acide organique.

2. Composition selon la revendication 1, dont l'aspect est limpide.

3. Composition selon la revendication 1 ou 2, dans laquelle la matière adoucissante textile est une matière cationique adoucissante textile.

4. Composition selon une ou plusieurs des revendications précédentes, dans laquelle l'acide organique est un acide carboxylique contenant au total 8 atomes de carbone ou moins.

5. Composition selon la revendication 4, dans laquelle l'acide organique contient au total 4 atomes de carbone ou moins.

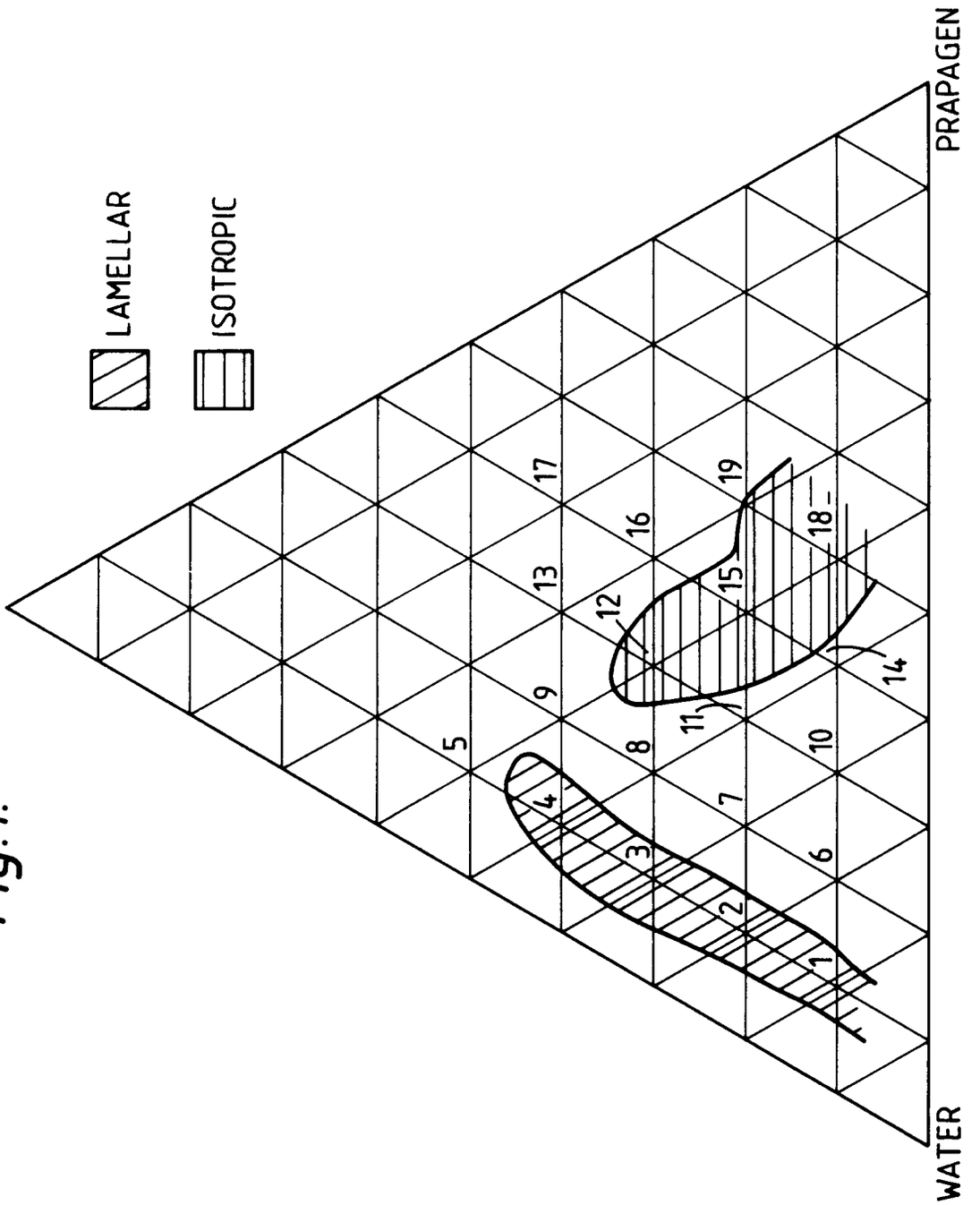
6. Composition selon la revendication 4, dans laquelle l'acide organique comprend l'acide propionique, l'acide lactique ou l'acide acétique.

7. Composition selon une ou plusieurs des revendications précédentes, qui comprend au moins 10% en poids d'acide organique.

8. Composition selon une ou plusieurs des revendications précédentes, qui comprend au moins 20% d'eau.

9. Procédé de préparation d'une composition liquide isotrope adoucissante textile, procédé qui consiste à combiner :
   (i) de 30 à 50% en poids d'une matière adoucissante textile ; et
   (ii) de 5 à 40% en poids d'un acide organique.

10. Procédé de traitement du linge, qui consiste à mettre en contact le linge avec une liqueur aqueuse comprenant de 0,01 à 2 g/l d'une composition selon l'une quelconque des revendications 1 à 8.


LAMELLAR
ISOTROPIC
TARTARIC ACID
PRAPAGEN
WATER
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2
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4
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10
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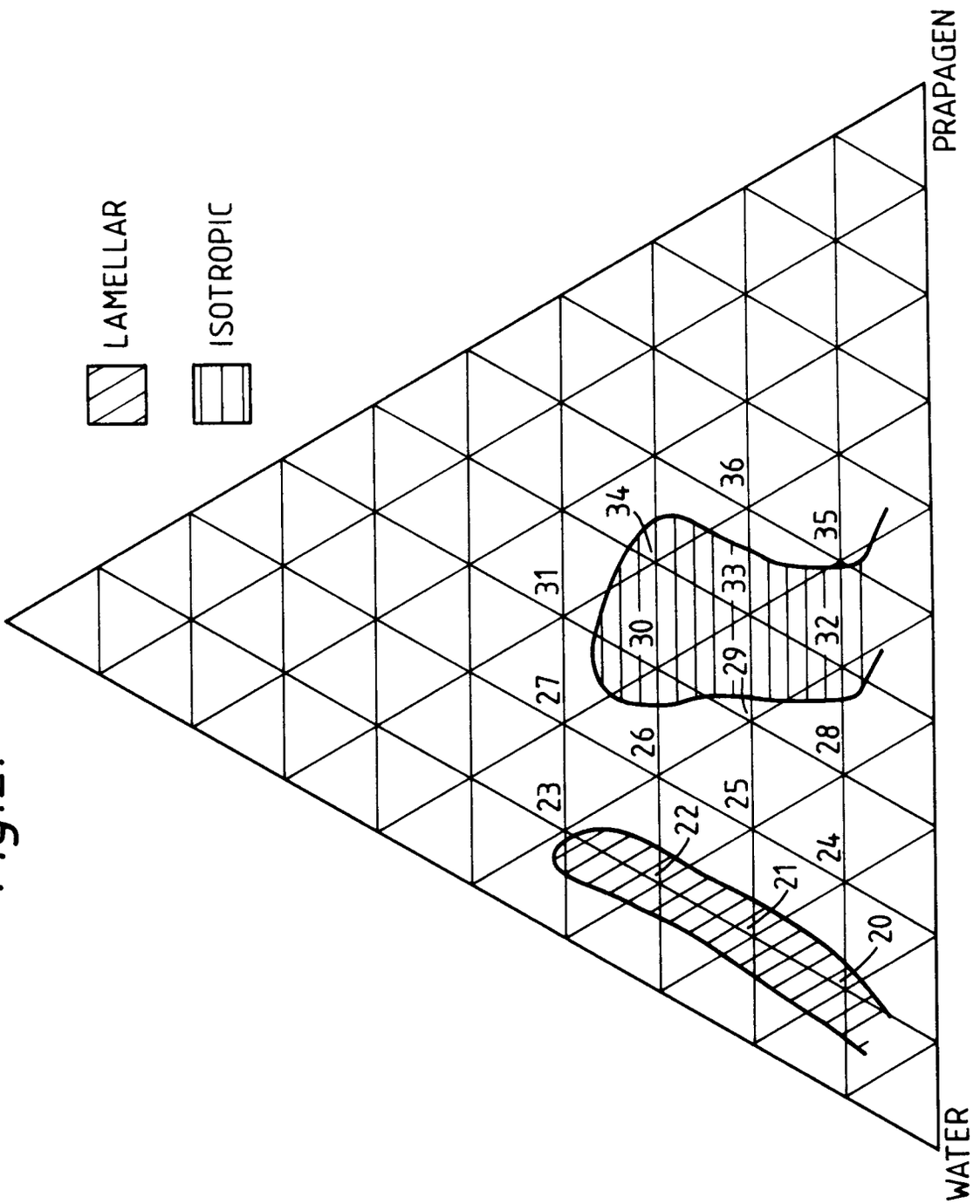
Fig. 1.

Fig.2.


CITRIC ACID
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