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Description

This invention concerns compositions for cleaning a wide range of items including hard surfaces and soft goods such as textiles both for commercial and home use.

5 The invention is primarily concerned with liquid water-based cleaning compositions such as liquid detergents, carpet cleaners, dishwashing liquids and hard surface cleaners, but the same principles are equally applicable to solid compositions for example in powder form.

Prior to this invention various suggestions have been made for obtaining synergistic detergency between one amphoteric and one or more nonionic surfactants of A. Mankowich, "Low Surfactant Contents Alkaline Cleaners", Report 62, Aberdeen Proving Ground, Maryland USA. To my surprise I have found considerable further benefits of synergistic detergency, low temperature cleaning, and improved compatibility characteristics by using more than one principal (cleaning) amphoteric surfactant with at least one non-ionic surfactant.

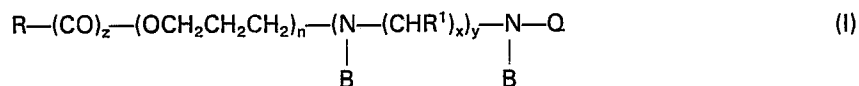
15 The invention thus provides a cleaning composition (preferably in liquid water-based form) which comprises at least two amphoteric surfactants and at least one non-ionic surfactant.

These compositions offer many advantages including particular:

- a) Improved detergency at low concentrations and low cost
- b) Very wide applicability to various cleaning uses
- c) Outstanding detergency at low temperatures with consequent energy saving
- 20 d) Ability to produce highly concentrated liquid detergent compositions even in the presence of alkaline builder
- e) Wide compatibility of the detergent system with many types of additives normally used in detergent compositions to confer specific additional properties.

Depending on the intended use, the compositions may also contain additives conventionally included in cleaning formulations. For example other surfactant may be added for specific properties, for example to add bactericidal properties, to boost foam or to confer softening properties. A further feature of this invention is the ease of incorporation of such additional surfactants without problems such as surfactant compatibility and stability of the formulation. Other additives may include alkaline builders to improve detergency, chelating or sequestering agents to avoid problems with heavy metal ions, optical brightening agents, solvents, dyes and perfumes.

30 The amphoteric surfactants are of the type having the general formula (I)



35 where R is a C₈₋₂₀ hydrocarbyl group, optionally substituted;

R¹ is H or C₁₋₆ alkyl;

B is H, alkyl or substituted alkyl, or a group Q as defined below;

40 Q is an anionic moiety;

x is 2 to 6;

y is 0 to 5;

z is 0 or 1; and

n is 0 or 1 (z being 0 when n is 1).

45 The compositions of the invention contain one or more (first) amphoteric surfactant(s) in which z is 0 and one or more (second) amphoteric surfactant(s) in which z is 1.

In these compounds, R may for example be a straight or branched alkyl or alkenyl group; a or cycloalkyl-alkyl (e.g. cyclohexyl-alkyl) group; an aralkyl or aralkenyl group in which the alkyl or alkenyl portion contains at least 6 carbon atoms; or the hydrocarbyl portion of a resinic acid containing at least two fused rings, e.g. as in the tricyclic pine resin acids such as abietic acid.

50 R is preferably a C₁₀₋₁₆ alkyl group, e.g. a C₁₂ group and an example of a branched chain group is C₁₆H₃₃CH(CH₃)—. The aliphatic portion of R may for example be the hydrocarbyl portion of lauric or coconut fatty acid, both of which contain high portion of C₁₂ constituents. An example of an unsaturated R group is oleyl. R may for example be substituted by hydroxy, as in hydroxystearyl, or by —COOH (e.g. at the 2-position).

55 In most surfactants of the formula (1) type, n is 0.

R¹ is usually a hydrogen atom, but may be an alkyl group such as methyl.

When B is an alkyl group, it may have 1—6, preferably 2—4, carbon atoms, and is preferably a straight chain group. Examples of such groups are methyl and ethyl. The alkyl group may be substituted, for example by hydroxy, as 2-hydroxyethyl, or by amino.

60 The group Q may for example be of the formula —R²COOM where R² is a C₁₋₆ alkylene group (such as methylene or ethylene) and M is hydrogen or an alkali metal, alkaline earth metal, ammonium or substituted ammonium ion (e.g. mono-, di- or tri-hydroxyethylammonium). M is preferably sodium, and R² is preferably methylene.

65 For the purposes of this invention, and because of the change of ionic properties with pH shown by

amphoteric surfactants, the free —COOH group is considered equivalent to —COONa or —COOK and ammonium or amine or other carboxylic acid salts.

The composition of this invention preferably contains a first amphoteric surfactant of formula (1) where R is a C₈₋₂₀ hydrocarbyl group derived from coco or tallow fatty acids;

- 5 R¹ is H,
B is H or Q as defined below
Q is an anionic moiety, preferably CH₂COONa or —CH₂CH₂COONa,
x is 2 to 4,
y is 0 to 4,
10 z is 0, and
n is 0;

in combination with a second amphoteric surfactant of formula (II) where:

- R is a C₈₋₂₀ hydrocarbyl group derived from coco, oleic or tall oil fatty acid,
R¹ is H,
15 B is H, hydroxyethyl or a group Q as defined below,
Q is an anionic moiety, preferably CH₂COONa or CH₂CH₂COONa,
x is 2,
y is 1,
z is 1, and
20 n is 0.

Commercially available examples of the first amphoteric surfactant include Deriphat 151, Deriphat 154, and the full sodium salts of Deriphat 151C, Deriphat 161C, Amphoram CP1, Diamphoram CP1, Triamphoram CP1, and Polyamphoram CP1 and Ampholak QTE (Deriphats® available from Henkel, Amphorams® from Ceca and Ampholak® QTE from Amphoterics International Ltd.).

- 25 Commercially available examples of the second amphoteric surfactant include products classed as cocoamphoglycinate or cocoamphopropionate (and similar products made from the other fatty acids listed), or cocamphocarboxyglycinate or cocoamphocarboxypropionate (and similar products made from the other fatty acids listed), for example Miranol® CM, C2M or C2MSF.

- In general the relative (weight) concentrations of the two amphoteric surfactants used is from 90:10 to 30 10:90, preferably 3:1 to 2:1 (first amphoteric:second amphoteric).

The non-ionic surfactants used are preferably ethylene oxide or propylene oxide/ethylene oxide adducts of alkylphenols (e.g. nonylphenol) or long chain alcohols or alkylamines (e.g. C₁₂₋₁₄ alcohols or C₁₂₋₁₈ alkylamines). The weight ratio of the principal amphoteric surfactants to the non-ionic surfactant(s) is generally from 10:1 to 1:2, preferably from 2.5:1 to 1.5:1 (e.g. about 2:1).

- 35 The non-ionic surfactant may for example be a nonylphenol-ethylene oxide adduct containing 6—12 moles ethylene oxide, a C₁₂₋₁₄ alcohol-ethylene oxide adduct containing 7—10 moles ethylene oxide, a C₁₂₋₁₈ alkylamine-ethylene oxide adduct containing 7—15 moles ethylene oxide or an equivalent ethylene oxide/propylene oxide block copolymer adduct.

- When a second non-ionic surfactant is included, it is may be of the same general type but is preferably 40 more lipophilic than the main non-ionic surfactant. The second material may for example be a nonylphenoethylene oxide adduct containing 4—6 moles ethylene oxide, a C₁₂₋₁₄ alcohol-ethylene oxide adduct containing 4—6 moles ethylene oxide, a C₁₂₋₁₈ alkylamineethylene oxide adduct containing 2—5 moles ethylene oxide or an equivalent ethylene oxide/propylene oxide block copolymer adduct. A second non-ionic surfactant of this kind is generally used at a lower concentration than the first; for example, the 45 weight ratio of the first to second surfactants may generally be from 100:1 to 60:40 or 70:30 in compositions containing a builder.

- One of the advantages of the invention is that the choice of non-ionic surfactant is not as critical as in conventional detergent systems, for example as regards the balance of detergent properties and water solubility required particularly in built systems. The amphoteric surfactants also solubilise the non-ionic 50 surfactants in formulations containing a builder.

- The compositions may also contain, depending on the intended use, additives such as builders (e.g. sodium metasilicate (anhydrous or pentahydrate), tetrapotassium pyrophosphate, caustic soda or nitrilotriacetic acid), chelating or sequestering agents (e.g. trisodium nitrilotriacetic acid, tetrasodium ethylenediamine tetracetic acid and trisodium hydroxyethylethylenediamine triacetic acid), solvents (e.g. 55 glycolethers such as butyl glycol ether, butyl cellosolve), fabric conditioners (e.g. quaternary ammonium salts, such as a di-fatty (usually tallow) dimethylammonium chloride (e.g. Arquad® 2 HT) or a di-fatty (usually tallow) imidazoline methosulphate or ethosulphate quaternary salt (e.g. Ammonyx® 4080 (Millmaster-Onyx), Imisoft® 75 (M & S Chemicals) & Ampholak TQ (Amphoterics International)), foam boosters (such as alkyl betaines or amine oxides, e.g. Emigen® BB & BT, Aromox® DMDC (Akzo) and Empigen OB (Albright & Wilson), Ammonyx LO and CDO (Millmaster-Onyx)), bactericides (e.g. a 60 bactericidal surfactant such as a benzalkonium chloride (e.g. Imiquat® BKC) or BTC 2125), optical brighteners (e.g. Tinopal® CBS-X & Tinopal 5BMS-X (Ciba)), dyes and perfumes.

- The quantity of such additives used will vary according to the application and the nature of the 65 particular additive. In general however liquid systems may contain 1—40% of a builder, 1—20% chelating

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agent, 1—10% solvent, 1—5% fabric conditioner, 1—5% foam booster, 1—5% bactericide, 0.1—1% optical brightener and 0.1—1% dyes and/or perfumes (percentages herein are by weight unless otherwise stated).

Liquid compositions which do not contain a builder may for example contain up to 50% of the principal amphoteric surfactants and up to 25% non-ionic surfactants, e.g. up to 40% first amphoteric surfactant, up to 10% second amphoteric surfactant, up to 20% first non-ionic surfactant and up to 5% second non-ionic surfactant.

(Percentages given herein for the amphoteric and non-ionic surfactants are on the basis of 30% active for the amphoterics and 100% active for the non-ionics; 'active' refers to concentration relative to the undiluted material).

Liquids detergents of the invention may for example have the following compositions:

	General	Preferred
First amphoteric	10—25%	18—22%
Second amphoteric	2—6%	3—5%
Non-ionic surfactant(s)	3—15%	8—12%
Builder	1—40%	10—20%
Chelating agent	1—20%	5—10%
Fabric conditioner	1—5%	2—4%
Optical brightener	0.1—1%	0.2—0.6%
Dye, perfume	0.1—1%	0.2—0.6%
Water	to 100%	

It will be appreciated that the overall compositions can be varied widely within the above ranges. The preferred concentration ranges refer to compositions of conventional dilution, but one of the advantages of the invention is that it offers the possibility of very highly concentrated solutions. Such compositions may for example contain up to 35% (e.g. 20—35%) of the builder (e.g. sodium metasilicate), up to 90% (e.g. 10—50%) of the two principal amphoteric surfactants (e.g. 9—40% of the first type and 1—15% of the second type) and up to 15% (e.g. 3—15%) of non-ionic surfactant(s). Examples of such compositions are

	Builder	First amphoteric	Second amphoteric	Non-ionic	Water
40	30%	9%	1%	3%	57%
	25%	17%	5%	8%	46%
45	22%	23%	4%	11%	40%

Hard surface cleaners of the invention may for example have the following composition:

	General	Preferred
Amphoteric—1	2—8%	3—5%
Amphoteric—2	1—4%	1.5—2.5%
Non-ionic surfactant(s)	1—6%	2—4%
Solvent	1—5%	2—4%
Builder	0—15%	8—12%
Foam booster	1—5%	2—4%
Bactericide	1—5%	2—4%
Water	to 100%	

The following examples illustrate the invention.

Example 1

A hard surface cleaner was made using 4% of the first type of amphoteric (Ampolak YCE), 2% of the second type of amphoteric (e.g. cocoamphoglycinate) together with 2% nonyl phenol 9 mole ethoxylate and 1% nonyl phenol 5.5 mole ethoxylate. This basic surfactant composition together with builders such as sodium metasilicate pentahydrate or tetra potassium pyrophosphate (10%) gave excellent cleaning results. Furthermore it was found possible to incorporate a bactericide of the 'benzalkonium chloride' type (3%) as well as a solvent such as butyl glycol ether (3%). Higher concentrations of the same type of formulation were easily possible without loss of stability. The results obtained were such as to give considerably better performance than conventional hard surface cleaners.

3—5% of amine oxide and about 2% NaCl was also found useful to increase the viscosity of this formulation, as well as increasing flash foam.

Furthermore, such products are normally based on anionic and nonionic surfactants where inclusion of a cationic bactericide gives problems of compatibility. Also, the amount of alkaline electrolyte which can be included in conventional products is limited by the level of surfactant (and vice versa). In such cases the addition of hydrotrope such as sodium xylene sulphonate is necessary in substantial amounts to confer stability.

Example 2

A liquid laundry detergent was prepared using, as base surfactant composition, 16% of the first type of amphoteric and 4% of the second type of amphoteric (as in Example 1) together with 8% nonyl phenol 9 mole ethoxylate and 2% nonyl phenol 5.5 mole ethoxylate. This was formulated with 15% sodium metasilicate pentahydrate, 2% chelating agent (sodium nitrilotriacetic acid), and optional brighteners (0.4%), dye and perfume.

Washing at 30°C, or even 20°C, gave superior results as compared to both to a conventional type of liquid laundry detergent based on anionic and nonionic surfactants and also conventional powder detergents, both as regards detergency and whitening. Furthermore, because of the compatibility of the surfactant system described in this invention, it was found possible to include easily a cationic bactericide of the type mentioned above and also a cationic fabric conditioning product (3% Ampholak TQ, described as a di-fatty imidazoline quaternary).

Since the amphoteric surfactants used were calculated to be 30% active, the net active content of the surfactant base described was only about one quarter of the active content of the comparative conventional laundry detergent and functioned better when used at only half the dosage level of the latter under the same conditions.

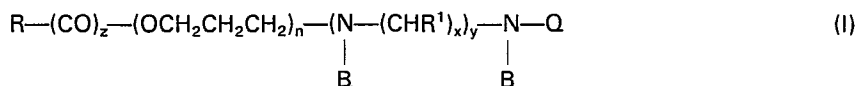
It was also found possible to prepare the compositions of Example 2 in more concentrated form, containing for example up to and over twice the stated concentrations of the various ingredients.

Furthermore, it is well known that conventional liquid laundry detergents of about 40% active surfactant content and above require the addition of solubiliser or hydrotrope to confer stability and the addition of alkaline builder to such a system is virtually impossible without total loss of stability. The type of formulation described in this invention, however, provided a considerably better performing detergent composition into which alkaline builder was easily included.

By use of combinations of two types of amphoteric surfactant together with one or more nonionic surfactants it was found possible to obtain excellent detergency even at low temperature coupled with ease of incorporation into alkaline 'built' products and with greater flexibility regarding the possible incorporation of useful cationic additives. Not only does this offer better performance at lower cost but further savings are possible by omission of otherwise non-functional ingredients such as solubilisers and hydrotropes. Such is the ease of formulation with this system that it is possible to produce highly concentrated products or combinations of products, thus reducing the weight and volume of product for a given purpose, reducing the amount of water needed in such products and thus offering cheaper packaging costs, and offering energy saving by possible use at lower temperatures.

Claims

1. A cleaning composition which comprises at least two amphoteric surfactants and at least one non-ionic surfactant, the amphoteric surfactants being of the type having the general formula (I)



where R is a C₈₋₂₀ hydrocarbyl group, optionally substituted;

R¹ is H or C₁₋₆ alkyl;

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- B is H, alkyl or substituted alkyl, or a group Q as defined below;
 Q is an anionic moiety;
 x is 2 to 6;
 y is 0 to 5;
 z to 0 or 1; and
 n is 0 or 1 (z being 0 when n is 1);
 the composition containing at least a first amphoteric surfactant as defined above in which z is 0 and a second amphoteric surfactant as defined above in which z is 1.
 2. A composition according to claim 1 in which Q is $\text{—R}^2\text{COOM}$ where R^2 is a C_{1-6} alkylene group and M is —H or an alkali metal, alkaline earth metal ammonium or substituted ammonium ion.
 3. A composition according to claim 1 which contains a first amphoteric surfactant of formula (1) where R is a C_{8-20} hydrocarbyl group derived from coco or tallow fatty acids;
 R^1 is H,
 B is H or Q as defined below
 Q is $\text{—CH}_2\text{COONa}$ or $\text{—CH}_2\text{CH}_2\text{COONa}$,
 x is 2 to 4,
 y is 0 to 4,
 z is 0, and
 n is 0;
 in combination with a second amphoteric surfactant of formula (1) where:
 R is a C_{8-20} hydrocarbyl group derived from coco, oleic or tall oil fatty acid,
 R^1 is H,
 B is H, hydroxyethyl or a group Q as defined below,
 Q is $\text{—CH}_2\text{COONa}$ or $\text{CH}_2\text{CH}_2\text{COONa}$,
 x is 2,
 y is 1,
 z is 1, and
 n is 0.
 4. A composition according to claim 1 which contains two non-ionic surfactants, the second of which is more lipophilic than the first and is present at a lower concentration than the first.
 5. A composition according to claim 1 in which the weight ratio of the first amphoteric surfactant to the second amphoteric surfactant is from 3:1 to 2:1 and the weight ratio of the first and second amphoteric surfactants to the non-ionic surfactant(s) is from 2.5:1 to 1.5:1.
 6. A composition according to claim 1 which contains one or more builders, chelating or sequestering agents, solvents, fabric conditioners, foam boosters, bactericides, optical brighteners, dyes or perfumes as additives.
 7. A composition according to claim 1 in the form of a liquid water-based composition.
 8. A composition according to claim 1 in the form of a liquid detergent having the composition A or B below, by weight:

	A	B
First amphoteric	10—25%	18—22%
Second amphoteric	2—6%	3—5%
Non-ionic surfactant(s)	3—15%	8—12%
Builder	1—40%	10—20%
Chelating agent	1—20%	5—10%
Fabric conditioner	1—5%	2—4%
Optical brightener	0.1—1%	0.2—0.6%
Dye, perfume	0.1—1%	0.2—0.6%
Water	to 100%	to 100%

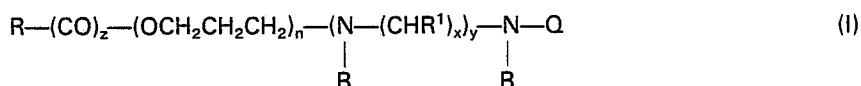
9. A composition according to claim 1 in the form of a highly concentrated liquid detergent containing 10—50% of the first and second amphoteric surfactants, 3—15% of the non-ionic surfactant(s) and 20—35% of the builder, by weight.
 10. A composition according to claim 1 in the form of a hard surface cleaner having the composition A or B below, by weight

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	A	B	
5	First amphoteric	2—8%	3—5%
	Second amphoteric	1—4%	1.5—2.5%
	Non-ionic surfactant(s)	1—6%	2—4%
10	Solvent	1—5%	2—4%
	Builder	0—15%	8—12%
	Foam booster	1—5%	2—4%
15	Bactericide	1—5%	2—4%
	Water	to 100%	to 100%

Patentansprüche

1. Reinigungszusammensetzung, welche mindestens zwei amphotere oberflächenaktive Mittel (Surfactant) und mindestens ein nichtionisches oberflächenaktives Mittel umfaßt, wobei die amphoteren oberflächenaktiven Mittel vom Typ der allgemeinen Formel (I)



sind, worin R eine C₈₋₂₀-Hydrocarbylgruppe, gegebenenfalls substituiert, ist;

R¹ Wasserstoff oder C₁₋₆-Alkyl ist;

B Wasserstoff, Alkyl oder substituiertes Alkyl oder eine Gruppe Q, wie weiter unten definiert, ist;

Q ein anionischer Teil ist;

x=2 bis 6;

y=0 bis 5;

z sich auf 0 oder 1 beläuft; und

n=0 oder 1 (z ist 0, wenn n=1);

wobei die Zusammensetzung mindestens ein erstes amphoterer oberflächenaktives Mittel, wie vorstehend definiert, worin z=0, und ein zweites amphoterer oberflächenaktives Mittel, wie vorstehend definiert, worin z=1, enthält.

2. Zusammensetzung gemäß Anspruch 1, worin Q—R²COOM ist, wobei R² eine C₁₋₆-Alkylengruppe ist und M für —H oder ein Alkalimetall-, Erdalkalimetall-, Ammonium- oder substituiertes Ammoniumion steht.

3. Zusammensetzung gemäß Anspruch 1, dadurch gekennzeichnet, daß sie ein erstes amphoterer oberflächenaktives Mittel der Formel (I) enthält, worin R eine C₈₋₂₀-Hydrocarbylgruppe, abgeleitet von Kokos- oder Talgfettsäuren, ist;

R¹=H,

B=H oder Q, wie weiter unten definiert,

Q=—CH₂COONa oder —CH₂CH₂COONa,

x=2 bis 4,

y=0 bis 4,

z=0, und

n=0,

in Kombination mit einem zweiten amphoterer oberflächenaktiven Mittel der Formel (I), worin:

R eine C₈₋₂₀-Hydrocarbylgruppe, stammend von Kokos-, Olein- oder Talgölfettsäure, ist,

R¹=H,

B=H, Hydroxyethyl oder eine Gruppe Q, wie weiter unten definiert,

Q=—CH₂COONa oder CH₂CH₂COONa,

x=2,

y=1,

z=1, und

n=0.

4. Zusammensetzung gemäß Anspruch 1, dadurch gekennzeichnet, daß sie zwei nicht-ionische oberflächenaktive Mittel enthält, wobei das zweite von ihnen mehr lipophil ist als das erste und bei niedrigerer Konzentration als das erste vorhanden ist.

5. Zusammensetzung gemäß Anspruch 1, dadurch gekennzeichnet, daß das Gewichtsverhältnis des

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ersten amphoteren oberflächenaktiven Mittels zu dem zweiten amphoteren oberflächenaktiven Mittel von 3:1 zu 2:1 ist und das Gewichtsverhältnis der ersten und zweiten amphoteren oberflächenaktiven Mittel zu dem(n) nicht-ionischen oberflächenaktiven Mittel(n) von 2,5:1 bis 1,5:1 beträgt.

6. Zusammensetzung gemäß Anspruch 1, dadurch gekennzeichnet, daß sie einen oder mehrere
5 Builders, Chelat- oder Sequestriermittel, Lösungsmittel, Gewebekonditioniermittel, Schaumverstärker, Bakterizide, optische Aufheller, Farbstoffe oder Parfums als Zusätze enthält.

7. Zusammensetzung gemäß Anspruch 1 in Form einer flüssigen Zusammensetzung auf Wasserbasis.

8. Zusammensetzung gemäß Anspruch 1 in Form eines flüssigen Detergens mit der unten stehenden Zusammensetzung A oder B, bezogen auf das Gewicht:

10

	A	B
Erstes Amphoter	10—25%	18—22%
15 Zweites Amphoter	2—6%	3—5%
Nicht-ionische(s) oberflächenaktive(s) Mittel	3—15%	8—12%
20 Builder	1—40%	10—20%
Chelatmittel	1—20%	5—10%
Gewebekonditionierer	1—5%	2—4%
25 Optischer Aufheller	0,1—1%	0,2—0,6%
Farbstoff, Parfum	0,1—1%	0,2—0,6%
30 Wasser	bis 100%	bis 100%

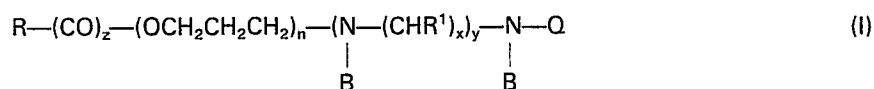
9. Zusammensetzung gemäß Anspruch 1 in Form eines hochkonzentrierten flüssigen Detergens, enthaltend 10 bis 50% der ersten und zweiten amphoteren oberflächenaktiven Mittel, 3 bis 15% des (der) nicht-ionischen oberflächenaktiven Mittel(s) und 20 bis 35% des Builders, bezogen auf das Gewicht.

35 10. Zusammensetzung gemäß Anspruch 1 in Form eines harten Oberflächenreinigers mit der unten stehenden Zusammensetzung A oder B, bezogen auf das Gewicht:

	A	B
40 Erstes Amphoter	2—8%	3—5%
Zweites Amphoter	1—4%	1,5—2,5%
45 Nicht-ionische(s) oberflächenaktive(s) Mittel	1—6%	2—4%
Lösungsmittel	1—5%	2—4%
Builder	0—15%	8—12%
50 Schaumverstärker	1—5%	2—4%
Bakterizid	1—5%	2—4%
55 Wasser	bis 100%	bis 100%

Revendications

1. Composition de nettoyage caractérisée en ce qu'elle comprend au moins deux agents surfactifs ou
60 tensioactifs amphotères et au moins un agent surfactif ou tensioactif non ionique, les agents surfactifs ou tensioactifs amphotères étant du type répondant à la formule générale (I)



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dans laquelle R représente un radical hydrocarbyle en C_8 à C_{20} , éventuellement substitué;

R^1 représente un atome d'hydrogène ou radical alkyle en C_1 à C_6 ;

B représente un atome d'hydrogène, un radical alkyle ou alkyle substitué, ou un radical Q tel que défini ci-dessous;

5 Q représente un groupement anionique;

x a une valeur qui varie de 2 à 6;

y a une valeur qui varie de 0 à 5;

z est égal à 0 ou à 1; et

n est égal à 0 ou à 1 (z étant égal à 0 lorsque n est égal à 1);

10 la composition contenant au moins un premier agent surfactif ou tensioactif amphotère tel que défini ci-dessus, dans lequel z est égal à 0 et un second agent surfactif ou tensioactif amphotère tel que défini ci-dessus dans lequel z est égal à 1.

2. Composition suivant la revendication 1, caractérisée en ce que Q représente le groupement $-R^2COOM$ où R^2 représente un radical alkylène en C_1-C_6 et M représente un atome d'hydrogène ou un ion
15 métal alcalin, métal alcalino-terreux, ammonium ou ammonium substitué.

3. Composition suivant la revendication 1, caractérisée en ce qu'elle contient un premier agent surfactif ou tensioactif amphotère de la formule (I) dans laquelle R représente un radical hydrocarbyle en C_8 à C_{20} qui dérive d'acides gras de coco ou de suif;

R^1 représente un atome d'hydrogène,

20 B représente un atome d'hydrogène ou le groupement

Q tel que défini ci-dessous,

Q représente un groupement $-CH_2COONa$ ou $-CH_2CH_2COONa$,

x a une valeur qui varie de 2 à 4,

y a une valeur qui varie de 0 à 4,

25 z est égal à 0;

n est égal à 0;

en combinaison avec un second agent surfactif ou tensioactif amphotère de la formule (I) dans laquelle:

R représente un radical hydrocarbyle en C_8 à C_{20} qui dérive d'acides gras de coco, de tall oil ou de l'acide oléique,

30 R^1 représente un atome d'hydrogène,

B représente un atome d'hydrogène, un radical hydroxyéthyle ou un groupement Q tel que défini ci-dessous,

Q représente un groupement $-CH_2COONa$ ou CH_2CH_2COONa ,

x est égal à 2,

35 y est égal à 1,

z est égal à 1, et

n est égal à 0.

4. Composition suivant la revendication 1, caractérisée en ce qu'elle contient deux agents surfactifs ou tensioactifs non ioniques, parmi lesquels le second est plus lipophile que le premier et est présent en une
40 concentration inférieure au premier.

5. Composition suivant la revendication 1, caractérisée en ce que le rapport pondéral du premier agent surfactif ou tensioactif amphotère au second agent surfactif ou tensioactif amphotère varie de 3:1 à 2:1 et le rapport pondéral des premier et second agents surfactifs ou tensioactifs amphotères à l'agent ou aux agent(s) surfactif(s) ou tensioactif(s) non ionique(s) varie de 2,5:1 à 1,5:1.

45 6. Composition suivant la revendication 1, caractérisée en ce qu'elle contient un ou plusieurs adjuvants actifs, un ou plusieurs agents chélateurs ou séquestrants, un ou plusieurs solvants, un ou plusieurs agents de mise en condition des tissus, un ou plusieurs agents d'amplification de moussage, un ou plusieurs bactéricides, un ou plusieurs agents d'azurage optique, un ou plusieurs colorants ou un ou plusieurs parfums, à titre d'additifs.

50 7. Composition suivant la revendication 1, caractérisée en ce qu'elle se présente sous la forme d'une composition liquide à base d'eau.

8. Composition suivant la revendication 1, caractérisée en ce qu'elle se présente sous la forme d'un détergent liquide ayant la composition A ou B qui suit, en poids:

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	A	B
Premier agent amphotère	10—25%	18—22%
5 Second agent amphotère	2—6%	3—5%
Surfactif(s) ou tensioactif(s) non ionique(s)	3—15%	8—12%
Adjuvant de détergence	1—40%	10—20%
10 Agent chélateur	1—20%	5—10%
Agent de mis en condition des tissus	1—5%	2—4%
15 Agent d'azurage optique	0,1—1%	0,2—0,6%
Colorant, parfum	0,1—1%	0,2—0,6%
Eau	jusqu'à 100%	jusqu'à 100%

20 9. Composition suivant la revendication 1, caractérisée en ce qu'elle se présente sous la forme d'un détergent liquide fortement concentré, contenant de 10 à 50% du premier et du second agents surfactifs ou tensioactifs amphotères, de 3 à 15% du ou des agents surfactifs ou tensioactifs non ioniques et de 20 à 35% de l'adjuvant de détergence, en poids.

25 10. Composition suivant la revendication 1, caractérisée en ce qu'elle se présente sous la forme d'un agent de nettoyage de surfaces dures, ayant la composition A ou B qui suit, en poids:

	A	B
30 Premier agent amphotère	2—8%	3—5%
Second agent amphotère	1—4%	1,5—2,5%
Agent(s) surfactif(s) ou tensioactif(s) non ionique(s)	1—6%	2—4%
35 Solvant	1—5%	2—4%
Adjuvant de détergence	0—15%	8—12%
40 Agent d'amplification de moussage	1—5%	2—4%
Bactéricide	1—5%	2—4%
Eau	jusqu'à 100%	jusqu'à 100%

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