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(54) **Sanitary composition**

(57) The invention is directed to a sanitary composition for cleaning and/or disinfecting and/or deodorizing comprising an adhesion promoter comprising a mono, di, or tri saccharide, preferably a monosaccharide or dis-

accharide and a metal soap of a fatty acid comprising from 10 to 24 carbon atoms, preferably from 12 to 18, more preferably from 12 to 16.

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Description

FIELD OF THE INVENTION

5 [0001] The present invention relates to a sanitary composition for cleaning and/or disinfecting and/or deodorizing sanitary elements, especially toilets.

TECHNICAL BACKGROUND

10 [0002] Several solutions exist for cleaning and/or disinfecting and/or deodorizing sanitary elements, especially toilets.
[0003] One very old solution is a block placed in cage. Another solution is a gelified liquid applied over the faience of the toilet, where the liquid is substantially viscous. Yet another solution is an adhesive gel that is applied locally to the toilet. The present invention deals with this latter technical solution.

[0004] Different publications deal with such adhesive compositions.

15 [0005] EP-A-1086199 discloses a sanitary product for cleaning and/or disinfecting and/or deodorizing, which product is said to be applicable directly to the sanitary ware, to be adhering there and only washable off after a large number of flushes, said product comprising water, anionic and/or nonionic and/or amphoteric surfactant, fragrances, an adhesion promoter selected from a wide list (comprising *inter alia* polyalkoxy alkanes, cellulose, starch, alginates, diurethanes, gelatines, pectines, oleyl amines, alkyl dimethyl amine oxides, stearates, sodium dodecylbenzene sulfonates, agar agar, acacia gum, carob bean flour, polyacrylates, polyvinyl alcohols and polyvinylpyrrolidones), and further exhibiting a specific viscosity (at least 15,000 mPas).

[0006] EP-A-1325103 is an improvement of the afore-mentioned patent application to the same applicant. The improvement lies in the use of specific polyhydroxy compounds.

25 [0007] WO-A-98/46712 discloses a gel sanitary composition comprising a polysaccharide (1-5%), a surfactant (3-25%) which is a C8-C22 alkyl polyglycolside, perfume (2-15%) and further additives. Xanthan gum and guar gums are examples of polysaccharides used in this patent application.

[0008] EP-A-0864637 also discloses a gel lavatory cleansing composition which permanently refreshes the air, in block form comprising surfactants, flush regulators, gel formers, fragrance (especially 0.5 to 20% by weight) and solvents. It is indicated that a certain fraction of the composition goes into solution during each flushing operation, such that the cleaning components are released continuously in the required amount. There is no indication about the adhesion properties.

30 [0009] Yet, the products known in the art still present some problems. Current self-adhesive gels applied on the toilet as disclosed above, especially as described in EP-A-1325103 and/or EP-A-1086199 are based on the mixing of anionic surfactant with nonionic surfactant which thanks to Van der Waals bonds makes hexagonal net. This kind of binding provides a gel structure. However, when the product is in use (during flushing), those bonds are broken. This causes dissolution at the surface of the gel and therefore a poor visual aspect when the product is positioned in the toilets. This is seen as a negative by the end consumer.

[0010] There is a requirement for the product to be self-adhesive, and yet be transparent or translucent.

40 SUMMARY OF THE INVENTION

[0011] The invention thus provides a self-adhesive sanitary composition for cleaning and/or disinfecting and/or deodorizing comprising:

- 45
- an adhesion promoter comprising a mono or oligosaccharide or mixtures thereof, preferably a monosaccharide or disaccharide or mixture thereof; and
 - a metal soap of one or more fatty acid(s) comprising from 10 to 24 carbon atoms, preferably from 12 to 18, more preferably from 12 to 16.

50 [0012] According to one embodiment, the composition comprises:

- an adhesion promoter comprising a monosaccharide or disaccharide, preferably a mixture thereof; and
- a metal soap of one or more fatty acid(s) comprising from 12 to 16 carbon atoms, preferably a sodium salt thereof.

55 [0013] According to another embodiment, the composition comprises, by weight based on the total weight of the composition:

- 5% to 40% of the mono or oligosaccharide, preferably 15% to 30%.

- 3% to 15% of the metal soap of fatty acid(s), preferably 5% to 10%.

[0014] According to another embodiment, the mono or oligosaccharide is glucose, fructose, saccharose, glucose syrup, or mixtures thereof, more preferably the mono or oligosaccharide is a sugar which is a mixture of saccharose and glucose syrup, advantageously in weight ratios of 40/60 to 80/20.

[0015] According to another embodiment, the fatty acid is lauric, palmitic, myristic, stearic acid or mixtures thereof, preferably the fatty acid is a lauric acid or palmitic acid or a mixture thereof, more preferably at a weight ratio of 20:80 to 80:20.

[0016] According to another embodiment, the metal soap is the sodium, potassium or calcium soap, preferably the sodium soap.

[0017] According to another embodiment, the composition further comprises an anionic and/or a cationic and/or a nonionic and/or an amphoteric surfactant, preferably an anionic surfactant, more preferably an anionic of the sulfate and/or sulfonate type.

[0018] According to another embodiment, the composition comprises by weight based on the total weight of the composition from 8% to 25%, preferably from 10 to 20%, of the surfactant.

[0019] According to another embodiment, the composition further comprises a perfume, preferably in an amount from 2% to 10%, more preferably from 3% to 8%, by weight based on the total weight of the composition.

[0020] According to another embodiment, the composition further comprising a viscosity regulator, preferably from the group of the mono-, polyhydric alcohols and/or alkyl ethers thereof, preferably a glycol or sorbitol, or an alkanolamine preferably diethanolamine.

[0021] According to another embodiment, the composition comprises by weight based on the total weight of the composition from 10% to 45%, preferably from 20 to 35%, of the viscosity regulator.

[0022] According to another embodiment, the composition further comprises additives, preferably in an amount from 0% to 5%, preferably from 1 % to 3%, by weight based on the total weight of the composition.

[0023] According to another embodiment, the composition further comprises a solvent, preferably water, preferably qsp 100%.

[0024] The invention also provides the use of the composition of the invention for cleaning and/or disinfecting and/or deodorizing sanitary elements, especially toilets.

[0025] The invention further provides a process for cleaning and/or disinfecting and/or deodorizing sanitary elements, especially toilets, comprising the steps of (i) adhering the composition of the invention to said element and (ii) flushing it.

[0026] The composition of the invention can be used with or without cages, and in the latter case is directly applied on the toilet ware, even on wet surfaces.

[0027] Without wishing to be bound by theory, the applicant believes that the beneficial effect of the invention is obtained thanks to a synergistic effect of saccharides, especially sugar, with fatty acids salts. The product obtained in the invention exhibits a multi-layers structure which provides self-adhesion and avoids quick dissolution at the surface of the gel. The gel structure is maintained for a longer time, providing enhanced aesthetical properties to the product.

[0028] The product of the invention is a gel, typically of a colloidal structure. The term gel has the meaning generally accepted in the art, as is used notably in the prior patent applications cited above. Yet the gel is substantially a rigid one but still allows for a direct application to the toilet ware. The rigidity is assessed either visually or by the measure of the viscosity. When the rigidity is assessed visually, in the context of this invention, one should understand the term rigidity, as a gel which is not self flowing at room temperature in the absence of any exterior forces, other than gravitational forces. When the rigidity is assessed by the measure of the viscosity, the gel of the invention has preferably a viscosity between 70,000 and 140,000 mPas, measured at 20°C, with a 25 mm cone / plate - angle 1 deg - shear rate 25s⁻¹.

DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0029] The present invention is disclosed in more details in the description that follows.

[0030] The invention is depicted in relation to the generic composition that is provided below as an example of a possible, non limiting, composition.

[0031] The saccharide is a mono or oligosaccharide or mixtures thereof. An oligosaccharide comprises up to 10 monomers. It is preferably a monosaccharide or disaccharide or a mixture thereof. Notably it can be a sugar. A preferred sugar is a mixture of saccharose/glucose syrup (notably 60/40).

[0032] Monosaccharides are known as "ose", and comprise triose, t6trose, pentose, hexose, heptose. Preferred oses are hexoses, such as glucose, fructose, mannose, especially glucose.

[0033] Disaccharides are also known and are formed of two "ose" bound by an osidic bound. Examples are maltose, lactose, cellubiose (reducing diholoside), and saccharose and trehalose (non-reducing diholoside).

[0034] The saccharide can also be the result of the hydrolysis of starch, with a high degree of hydrolysis. The DE value (dextrose equivalent) is typically higher than 20.

[0035] More generally the preferred mixture of sugar is of the following chemical composition : $X\% (C_nH_{2n}O_n) + Y\% (C_pH_{2m}O_m)$ with $n=6$, $p=12$ and $m < p$ and $X+Y=100$.

[0036] The saccharide is generally in an amount from 5% to 40%, preferably 15% to 30%.

[0037] The fatty acid soap is a soap of a fatty acid comprising from 10 to 24 carbon atoms, preferably from 12 to 18, more preferably from 12 to 16. Representative acids are lauric, palmitic, myristic and stearic acids, as well as mixtures thereof. Preferably the acids are lauric and palmitic acids, as well as mixtures thereof. Mixtures of lauric and palmitic acids are especially preferred. The soap is obtained with a metallic salt, such as sodium, calcium and potassium. The preferred salt is the sodium salt. The fatty acid metal soap is generally in an amount from 3% to 15%, preferably 5% to 10%.

[0038] The invention is based on this combination of the mono or oligosaccharide and the metal soap.

[0039] Further commonly used components can be used. Notably, an anionic, cationic, nonionic or amphoteric surfactant can be present. There is generally no restriction as to the use of any of these surfactants. The preferred surfactant is of the anionic type.

[0040] Anionic surfactants can be:

(i) carboxylates (other than the fatty acids soaps used in the invention) such as alkyl carboxylates, aryl carboxylates, esters of carboxylic acids, ethers of carboxylic acids.

(ii) sulfates such as alkyl sulfates, e.g. ammonium lauryl sulfate (ALS), sodium lauryl sulfate (SLS, sodium dodecyl sulfate); MEA-alkyl sulfate; alkyl ether sulfates, e.g. sodium laureth sulfate, (sodium lauryl ether sulfate, SLES), sodium myreth sulfate; alkyl aryl ether sulfates; sulfated alkanolamides; glyceride sulfates.

(iii) sulfonates such as alkyl aryl sulfonates, e.g. dodecyl benzene sulfonate and synthetic detergents; alkyl sulfonates, e.g. alpha olefin sulfonates (AOS), primary and secondary paraffin sulfonates (PS, SAS); sulfo fatty acids esters, e.g. FES (fatty esters sulfonate), MES (methyl ester sulfonate), ASME (a-sulfo methyl ester); sulfosuccinates, e.g. mono-alkyl sulfosuccinates, di-alkyl sulfosuccinates; fatty acid isethionates and taurides; lignosulfonates.

(iv) phosphoric acid, esters and salts, such as alkyl aryl ether phosphate; alkyl phenol ether phosphates; alkyl ether phosphate; alkyl phosphates.

(v) acylamino acids and salts, such as acyl glutamates, acyl peptides, acyl sarcosides.

[0041] A further possible list of anionic surfactant can be found at paragraphs [0056] to [0062], inclusive, of US2008/0255017 which is incorporated herein by reference. Preferred anionic surfactants are of the sulfate and/or sulfonate type.

[0042] Nonionic surfactants can be:

(i) fatty alcohols (alkanediols); such as cetyl alcohol, stearyl alcohol, cetostearyl alcohol (consisting predominantly of cetyl and stearyl alcohols), oleyl alcohol

(ii) ethers; such as alkoxyated alcohols, especially ethoxylated alcohols, e.g. polyethyleneglycol (PEG), octaethylene glycol monododecyl ether, pentaethylene glycol monododecyl ether; EP/PO block polymer, e.g. ethoxylated PPG ether, polyoxypropylene glycol alkyl ethers, poloxamers; alkylpolyglucosides; ethoxylated oils and fats.

(iii) alkanolamides, such as mono- or dialkanolamide, ester-amide; ethoxylated alkanolamides, polyethoxylated monoalkanolamide esters.

(iv) ethoxylated fatty acids such as PEG fatty acid ester and PEG fatty acid diester.

(v) glycol esters, glycerol esters, and ethoxylated derivatives, such as ethylene glycol ester, propylene glycol ester, monoglyceride, 1,3-diglyceride, polyethoxylated 1,3-diglyceride, polyglyceryl monoester, glyceryl laurate.

(vi) sorbitan and sorbitol esters and ethoxylated derivatives, such as 1, 4-sorbitan monoester, sorbitan triester, polyethoxylated sorbitan monoester, spans

(vii) alkyl carbohydrate esters such as saccharose fatty acid monoester

(viii) amine oxides such as dodecyldimethylamine oxide

[0043] A further possible list of nonionic surfactant can be found at paragraphs [0039] to [0050], inclusive, of US2008/0255017 which is incorporated herein by reference.

[0044] Cationic surfactants can be:

(i) alkyl amines, such as dimethyl alkyl amine and alkylamido dimethyl propylamine.

(ii) alkylimidazolines and imidazolines

(iii) quaternary ammonium compounds such as tetraalkyl(-aryl) ammonium salts, heterocyclic ammonium salts, e.g. n-alkyl imidazoline chlorides, alkyl betaines, ethoxylated alkyl amines e.g. alkyl propanediamine ethoxylate, esterified quaternaries e.g. esterquat.

[0045] Amphoteric surfactants can be:

- (i) carboxylates, such as acyl ethylenediamines and derivatives, e.g. acylamphoacetate, acylamphodiacetate, acylamphodipropionate.
 (ii) n-alkyl amino acids or imino diacids such as alkyl aminopropionic acid, sodium coco glycinate, aminopropyl alkylglutamide, sodium alkyliminodipropionate
 (iii) phosphates, such as lecithin.
 (iv) sulfonates such as CHAPS (3-[(3-cholamidopropyl) dimethylammonio]-1-propanesulfonate)
 (v) sultaine such as cocamidopropyl hydroxysultaine.

[0046] The surfactant is generally in an amount from 8% to 25%, preferably from 10 to 20%.

[0047] A perfume is generally present in the composition. The perfume can be as disclosed at paragraph [0064] of US2008/0255017 which is incorporated herein by reference. The fragrance can be based on flowers fragrance, fruits, spices, and the like. The perfume can be of natural origin or can be synthesized. It is present generally in an amount from 2% to 10%, preferably from 3% to 8%.

[0048] A viscosity regulator (also known as flush regulator) is generally present in the composition. As viscosity regulator, it can be chosen from the group of the mono or di - alcohols and polyols, and/or alkyl ethers. It can notably be a glycol such as propylene glycol (propane-1,2-diol ; 1,2-dihydroxypropane ; methyl glycol ; trimethyl glycol). Or it can be more generally a diol, such as 1,3 dihydroxypropane, 1,3 or 1,4 dihydroxybutane, 1,3 dihydroxyisobutane, or a polyol such as sorbitol or pentaerythritol. Alkyl ethers are possible, such as methyl, ethyl and n-butyl ether; for example it can be dipropylene glycol methyl ether. It can also be an alkanolamine such as diethanolamine. It is generally present in an amount from 10% to 45%, preferably from 15% to 30%.

[0049] Thickeners can be used, such as xanthan gum, acacia gum, guar gum or carrageenan gum.

[0050] A solvent is used in the composition. It can be water, alcohol such as ethanol, or a mixture thereof. The preferred solvent is water. The amount is qsp 100%.

[0051] Various additives known in the art of sanitary compositions can be added. The sanitary agent can thus comprise further customary constituents, for example disinfectants, enzymes, particles such as colored PET or PP, preservatives, biocides, etc. such as, for example, isothiazolone derivative, EDTA, or foam stabilizers, such as coconut fatty acid amidopropylbetaine or coconut fatty acid amidopropyldimethylamine oxide, coconut fatty acid mono/diethanolamide or alkyl polyether glycerol ether sulfates, but also dyes or colorant and/or substances which dissolve limescale or urine scale in particular acids and/or phosphonates. The amount of additives is generally from 0% to 5%, preferably from 1 % to 3%.

[0052] The composition is manufactured according to the following process. In an auxiliary vessel metal soap is introduced, which is then melted. In the main manufacturing vessel, the melted soap is added together with the saccharide at a temperature such that the mixture remains liquid. The mixture of surfactant, pre-heated at the right temperature is then added to the main vessel. A solution of the solvent and the viscosity regulator is prepared in a second auxiliary mixer, it is then added to main mixer. The final mixture is then cooled down at e.g. 60°C before fragrances, dyes and other additives are added to main mixer. The mixture is then poured in ad hoc container and cooled down at room temperature

[0053] When the saccharide is a mixture of two or more, they can be added at separate steps during the process. Also, it is possible to add the viscosity regulator at different stages of the process.

[0054] The composition is applied onto the toilet ware according to known processes as depicted in the afore-mentioned EP-A-1325103 and EP-A-1086199 and/or using the tools disclosed in the following patent applications WO-A-2007/008532, EP-A-2141221, WO-A-2011/135330 and EP-A-2281756.

[0055] In the invention, all percentages are by weight, based on the total weight of the composition, unless specified otherwise.

[0056] The following examples illustrate the invention without limiting it.

EXAMPLE

[0057] The following compositions are manufactured.

[0058] The compositions are rigid, while plastic enough to be easily applied on the toilet. They are easy to apply on toilet and have good adhesive properties. Before flushing, the compositions are very transparent with a nice visual aspect. This nice visual aspect is retained through the flushing. The life time is about 100 flushes.

Components	1	2	3	4	5	6
Water	QSP100%	QSP100%	QSP100%	QSP100%	QSP100%	QSP100%

(continued)

Components	1	2	3	4	5	6
Sodium Lauryl Ether Sulfate (70%)	18.00%	10.10%	11.50%	20.90%	22.80%	24.60%
Diethanolamine - DEA	13.00%	14.60%	15.75%	13.20%	19.90%	11.50%
Sugar*	25.00%	25.40%	28.20%	16.30%	20.00%	23.70%
Monopropylene glycol and/or sorbitol	12.00%	12.20%	14.50%	7.80%	10.80%	13.80%
Perfume	5.00%	4.00%	5.00%	3.50%	3.50%	3.50%
Sodium palmitate	3.50%	3.50%	5.25%	2.30%	4.60%	6.90%
Sodium laurate	3.50%	3.50%	5.25%	2.30%	4.60%	6.90%
EDTA	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%
Disodium Laureth Sulfosuccinate	2.00%	1.90%	3.50%	0.50%	2.50%	4.60%
Benzisothiazolinone	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Dye	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
* 60/40 saccharose / glucose syrup						

Claims

1. Self-adhesive sanitary composition for cleaning and/or disinfecting and/or deodorizing comprising

- an adhesion promoter comprising a mono or oligosaccharide or mixtures thereof, preferably a monosaccharide or disaccharide or mixture thereof; and
- a metal soap of one or more fatty acid(s) comprising from 10 to 24 carbon atoms, preferably from 12 to 18, more preferably from 12 to 16.

2. Composition according to claim 1, comprising

- an adhesion promoter comprising a monosaccharide or disaccharide, preferably a mixture thereof; and
- a metal soap of one or more fatty acid(s) comprising from 12 to 16 carbon atoms, preferably a sodium salt thereof.

3. Composition according to claim 1 or 2, comprising, by weight based on the total weight of the composition:

- 5% to 40% of the mono or oligosaccharide, preferably 15% to 30%.
- 3% to 15% of the metal soap of fatty acid(s), preferably 5% to 10%.

4. Composition according to any one of claims 1 to 3, wherein the mono or oligosaccharide is glucose, fructose, saccharose, glucose syrup, or mixtures thereof, more preferably the mono or oligosaccharide is a sugar which is a mixture of saccharose and glucose syrup, advantageously in weight ratios of 40/60 to 80/20.

5. Composition according to any one of claims 1 to 5, wherein the fatty acid is lauric, palmitic, myristic, stearic acid or mixtures thereof, preferably the fatty acid is a lauric acid or palmitic acid or a mixture thereof, more preferably at a weight ratio of 20:80 to 80:20.

6. Composition according to any one of claims 1 to 5, wherein the metal soap is the sodium, potassium or calcium soap, preferably the sodium soap.

7. Composition according to any one of claims 1 to 6, further comprising an anionic and/or a cationic and/or a nonionic and/or an amphoteric surfactant, preferably an anionic surfactant, more preferably an anionic of the sulfate and/or

sulfonate type.

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8. Composition according to claim 7, comprising by weight based on the total weight of the composition from 8% to 25%, preferably from 10 to 20%, of the surfactant.
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9. Composition according to any one of claims 1 to 8, further comprising a perfume, preferably in an amount from 2% to 10%, more preferably from 3% to 8%, by weight based on the total weight of the composition.
11. Composition according to any one of claims 1 to 9, further comprising a viscosity regulator, preferably from the group of the mono-, polyhydric alcohols and/or alkyl ethers thereof, preferably a glycol or sorbitol, or an alkanolamine preferably diethanolamine.
- 15
11. Composition according to claim 10, comprising by weight based on the total weight of the composition from 10% to 45%, preferably from 20 to 35%, of the viscosity regulator.
12. Composition according to any one of claims 1 to 11, further comprising additives, preferably in an amount from 0% to 5%, preferably from 1 % to 3%, by weight based on the total weight of the composition.
- 20
13. Composition according to any one of claims 1 to 12, further comprising a solvent, preferably water, preferably qsp 100%.
14. Use of the composition according to any one of claims 1 to 13 for cleaning and/or disinfecting and/or deodorizing sanitary elements, especially toilets.
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15. Process for cleaning and/or disinfecting and/or deodorizing sanitary elements, especially toilets, comprising the steps of (i) adhering the composition according to any one of claims 1 to 13 to said element and (ii) flushing it.



EUROPEAN SEARCH REPORT

Application Number
EP 12 16 7737

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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