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(54) **Adhesive hygienizing composition for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures**

Klebrige Hygienisierungszusammensetzung zum Reinigen und/oder Desinfizieren und/oder Parfümieren von sanitären Befestigungsmitteln

Composition hygiénisante adhésive pour le nettoyage et/ou la désinfection et/ou parfumer des installations sanitaires

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Description

[0001] The present invention relates to an adhesive hygienizing composition for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures.

[0002] The present invention falls within the technical field of products for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures such as WCs, bidets, pissoirs and washbasins, in particular, of products or hygienic compositions directly applied to the sanitary fixture, to which they adhere i.e. without the help of supports and/or containers, and which act by flushing with water due to discharge operations.

[0003] Traditional products used for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures (hereafter, "hygienizing products") generally consist of chemical compositions (hereafter, "hygienizing compositions") contained inside "cages" equipped with specific supports which make their application possible at the edge of the sanitary fixture. The cleaning action is exerted by flushing the hygienizing composition, i.e. by the entrainment of the hygienizing composition on the part of the water which flushes the composition and its container every time a water flow is activated during discharge operations.

[0004] These hygienizing products, however, are not very practical or hygienic for the user both at the moment of substitution and also for the manual cleaning of the sanitary fixture.

[0005] In order to overcome these drawbacks, hygienizing products have been recently developed in solid or paste form directly applicable to sanitary fixtures, to which they adhere without the help of any container and/or support. Also in this case, the cleaning action is exerted through the flushing of the composition on the part of the flow of discharge water and the product is completely washed away only after a certain number of discharge operations.

[0006] The above hygienizing compositions generally comprise water, surfactants, adhesion promoters, perfumes and possibly other additives.

[0007] Examples of hygienizing products directly applicable to sanitary fixtures without the help of any support and/or container can be found in EP 1,086,199 and EP 1,325,103. They describe hygienizing products characterized by a water content ranging from 20% to 70% by weight of the product. According to these documents water is an indispensable component for obtaining adhesion of the hygienizing product to the sanitary fixture to which it is applied.

[0008] The use of hygienizing products directly applicable to sanitary fixtures currently available on the market, however, has various drawbacks. First of all, the product applied has large dimensions, compared with the size of the surface of the sanitary fixture, with a consequent encumbrance of the same surface and also an unpleasant aesthetical effect. This encumbrance also hinders the cleaning of the sanitary fixture. The product is applied using relatively complex devices and methods, which are difficult to effect on the part of the user.

[0009] The Applicant has now surprisingly found an adhesive hygienizing composition for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures which overcomes the disadvantages of the state of the art.

[0010] A main objective of the present invention is therefore to provide an adhesive hygienizing composition for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures, directly applicable to the sanitary fixture to which it adheres without the help of supports and/or containers, having a reduced encumbrance but at the same time an adhesion to the wall of the sanitary fixture and an optimum duration.

[0011] A further objective of the present invention is to simplify the preparation of the adhesive hygienizing compositions for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures directly applicable to sanitary fixtures and reduce their production costs.

[0012] An object of the present invention therefore relates to an adhesive hygienizing composition, directly applicable to a sanitary fixture to which it adheres without the help of supports and/or containers, for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures, having a maximum content of water of 2.5%, comprising:

i) from 20% to 70% of vinyl methyl ether/maleic acid copolymers as an adhesion promoter,
ii) from 20% to 50% of at least one surfactant selected from anionic and/or amphoteric and/or cationic surfactants,
iii) disinfecting and/or perfuming agents,
iv) optionally a compound of the polyhydroxyl type,
v) optionally dyes and/or cleaning aids and/or foaming agents and/or thickening agents (said percentages being expressed as percentages by weight with respect to the total weight of the composition).

[0013] The adhesive hygienizing composition, object of the invention is preferably produced in solid form. It is characterized by a melting point ranging from 30 to 70°C, more preferably from 35 to 55°C and even more preferably from 40 to 50°C.

[0014] The main advantages of the adhesive hygienizing composition according to the present invention consist in its direct applicability to the sanitary fixture, its high efficacy, its long duration with time and improved aesthetical appearance.

[0015] Furthermore, the formulation of the adhesive hygienizing composition according to the present invention is such that it does not require the use of inert ingredients having the sole function of filling excipient.

[0016] Although the adhesive hygienizing composition according to the present invention has a reduced volume, it exerts its cleaning action by flushing and is only completely washed away after a high number of discharge water flows.

[0017] A further object of the present invention relates

to the process for preparing said hygienic compositions and their use for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures. Another object of the present invention also relates to the process for cleaning and/or disinfecting and/or perfuming a sanitary fixture according to claim 23.

[0018] Polyalkoxyalkanes which are used for the purposes of the present invention are organic compounds with a long hydrophile chain or having at least a part of the molecule with hydrophilic properties.

[0019] Particularly preferred compounds for the purposes of the present invention are polyalkoxyalkanes, in which the hydrophilic part can consist of polyethoxy groups. Compounds of the polyethoxyalkane type preferably have a number of ethoxyl groups ranging from 15 to 55, preferably from 25 to 45, even more preferably from 20 to 30. The alkyl radical of the polyalkoxyalkanes has at least 12 carbon atoms, preferably from 16 to 30 carbon atoms.

[0020] In a preferred embodiment, the polyalkoxy alkanes are selected from ethoxylated alcohol with a chain of 22 carbon atoms (C_{22}) and with 30 ethoxy groups, ethoxylated alcohol ($C_{16/18}$) with 25 ethoxy groups and/or mixtures thereof, preferably ethoxylated alcohol with a chain of 22 carbon atoms (C_{22}) and with 30 ethoxy groups.

[0021] In order to obtain a good adhesion of the hygienizing composition according to the present invention, component i) is present in a quantity ranging from 20% to 70% by weight with respect to the total weight of the composition, preferably from 30% to 70% and, even more preferably from 45% to 60%.

[0022] The detergent action of the composition according to the present invention is exerted by a surfactant compound selected from anionic and/or amphoteric and/or cationic surfactants.

[0023] Anionic surfactants which can be used for the purposes of the present invention are selected from sodium dodecylbenzenesulfonate, sodium alkane sulfonates, alkyl sulfates, alkylether sulfates, sulfonated alpha-olefins, sulfated alcohol ethers, alkylsulfosuccinates and/or mixtures thereof.

[0024] The anionic surfactant is preferably TEA laurylsulfate.

[0025] Amphoteric surfactants can also be used for the purposes of the present invention, selected from alkylbetaines and/or alkylamido-betaines and/or alkylaminooxides or cationic surfactants which comprise, for example, quaternary ammonium salts.

[0026] The surfactant used in the composition according to the present invention is present in a quantity ranging from 20% to 50% by weight with respect to the total weight of the composition, preferably from 30% to 40%.

[0027] The composition according to the present invention also envisages the use of substances which favour preserving the solid consistency of the adhesive hygienizing composition also during use.

[0028] Substances used for this purpose are polyhydroxyl compounds belonging to the group comprising glycerin, polyethylene glycol, 1,3-dihydroxypropane, 1,3- or 1,4-dihydroxybutane, 1,3-dihydroxyisobutane, pentaerythritol, 1,2-dihydroxypropane, 1,2- or 2,3-dihydroxybutane, 1,2-dihydroxyisobutane, diethylene glycol, triethylene glycol, preferably glycerine or polyethylene glycol and/or mixtures thereof.

[0029] The concentration of the possible polyhydroxyl compound and/or mixture of hydroxyl compounds in the composition can vary from 1% to 10% by weight with respect to the total weight of the composition, preferably from 2% to 6%.

[0030] The adhesive hygienizing composition according to the present invention also contains disinfecting and/or perfuming agents and possibly dyes and/or cleaning aids and/or foaming agents and/or thickening agents, selected from those commonly known to experts in the field.

[0031] The concentration of the perfuming agents can range from 1% to 15% by weight with respect to the total weight of the composition, preferably from 4% to 10%.

[0032] The concentration of the cleaning aids can range from 0.1% to 10% by weight with respect to the total weight of the composition, preferably from 0.5 to 5%.

[0033] The cleaning aids are preferably a mixture of biological agents capable of producing gram-positive micro-organisms selected from bacteria, yeasts, spores, etc. The cleaning aids are more preferably a mixture of gram-positive micro-organisms and/or biological agents capable of producing said micro-organisms in a concentration ranging from 10^4 to 10^{12} cfu/g, said micro-organisms belonging to the species *Bacillus subtilis, Bacillus licheniformis, Bacillus sphaericus, Bacillus thuringensis* and/or *Paenicillium camenbertii.*

[0034] The gram-positive micro-organisms preferably belong to the species *Bacillus subtilis* and/or *Bacillus licheniformis.*

[0035] The gram-positive micro-organisms and/or biological agents capable of producing said micro-organisms are preferably present in a concentration ranging from 10^6 to 10^{10} cfu/g, more preferably from 10^7 to 10^9 cfu/g.

[0036] The lipase, protease, cellulase, amylase and urease action of these gram-positive micro-organisms and/or biological agents capable of producing these micro-organisms, combined with the detergent action of the surfactant compound, allows a high efficiency to be obtained in removing the dirt in all areas of the sanitary fixture to which the adhesive hygienizing composition is applied. In WC basins, for example, the hygienizing and disinfecting action is extended over the whole surface of the basin starting from the waterline as far as the upper edge of the basin itself, both in areas close to the application point and in areas farther away, at the same time also removing unpleasant odours, with an effectiveness which is both immediate and above all prolonged with time which is thus exerted not only in correspondence with every water flushing but also in the time intervals

between one water flushing and another.

[0037] The effects of these micro-organisms in inhibiting the formation and growth of undesired gram-negative micro-organisms is described in detail in patent application IT 1381675 in the name of the same Applicant.

[0038] The dyes which can be used for giving the adhesive hygienizing composition particular aesthetical effects comprise not only chemical substances belonging to the various groups of dyes known to exerts in the field, but also so-called coloured "specula" consisting of mixtures generally comprising sodium carbonate and/or sodium sulfate and/or bentonite or its derivatives and/or plastic material (for example polyethylene, polypropylene and mixtures thereof) and/or zeolitic compounds.

[0039] In a preferred embodiment, the above component iv) is a mixture of glycerin and polyethyleneglycol wherein the glycerin is present in a quantity equal to 3% by weight with respect to the total weight of the composition and the polyethyleneglycol is present in a quantity equal to 1% by weight with respect to the total weight of the composition.

[0040] In a further preferred embodiment, an adhesive hygienizing composition according to the present invention can consist of the following components:

i-a) vinyl methyl ether/maleic acid copolymer, in a quantity equal to 0,2 % by weight with respect to the total weight of the composition;
i-b) ethoxylated alcohol (C_{22}) with 30 ethoxy groups and/or ethoxylated alcohol ($C_{16/18}$) with 25 ethoxy groups in a quantity equal to 53,8 % by weight with respect to the total weight of the composition;
ii) TEA laurylsulfate in a quantity equal to 34% by weight with respect to the total weight of the composition;
iii) perfuming agents in a quantity equal to 6% by weight with respect to the total weight of the composition;
iv) glycerin in a quantity equal to 4% by weight with respect to the total weight of the composition;
v) cleaning aids in a quantity equal to 2% by weight with respect to the total weight of the composition consisting of a mixture of *Bacillus spp* comprising strains of *Bacillus subtilis* and *Bacillus licheniformis* having an activity equal to about 10^8 cfu/g.

[0041] A further object of the present invention relates to a process for the preparation of the above adhesive hygienizing compositions directly applicable to sanitary fixtures, to which they adhere i.e. without the help of supports and/or containers.

[0042] The process for the preparation of an adhesive hygienizing composition for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures, said composition having a maximum content of water of 2.5% and comprising

i) from 20% to 70% of a mixture of polyalkoxyalkanes and/or vinyl methyl ether/maleic acid copolymers as an adhesion promoter;
ii) from 20% to 50% of at least one surfactant selected from anionic and/or amphoteric and/or cationic surfactants;
iii) disinfecting and/or perfuming agents;
iv) optionally a compound of the polyhydroxyl type;
v) optionally dyes and/or cleaning aids and/or foaming agents and/or thickening agents,

comprises the following operational phases:

- heating component i) to a temperature higher than its melting point;
- incorporating components ii), iii) and, when present, components iv) and v),
- homogenizing the composition by mixing to a temperature ranging from 45°C to 65°C for a time ranging from 5 minutes to 30 minutes,
- pouring the composition into a container,
- letting the composition cool until solidification.

[0043] When the adhesive hygienizing composition also comprises cleaning aids, their addition to the mixture is effected after the homogenization phase, at a temperature of the mixture not higher than 65°C. The mixture thus obtained is further mixed before being poured into the container.

[0044] The process for the preparation of the adhesive hygienizing composition does not envisage the use of water.

[0045] The water possibly present in the adhesive hygienizing composition is only due to the presence of traces of humidity in the components used for the preparation of the adhesive hygienizing composition. The components typically contain an average of 0,2 % by weight of water. This concentration however can also be higher, until it determines a maximum water content in the end-product, i.e. in the adhesive hygienizing composition, equal to 2,5 % by weight.

[0046] With respect to the preparation process of analogous hygienizing products, the advantages of the process, object of the present invention, are the following:

- the solidified end-product does not require mechanical refinishing treatment (for example drawing);
- the heating of the composition is limited to reaching the melting point of component i) (generally lower than 60°C); this prevents the evaporation of volatile substances such as perfuming agents;
- the composition is cast and solidified in a container which gives the final form of the product ready for use and does not require further processing (for example line-end cutting);
- various forms of end-products can be produced, unlike traditional drawing-extrusion processes which greatly limit the variety of possible configurations.

[0047] In a preferred application, the adhesive hygienizing composition according to the present invention is produced in the form of a tablet having dimensions of about 11 x 4 x 1 cm, making it hardly visible inside the sanitary fixture to which it is applied, unlike the much more encumbering products according to the disclosures of the state of the art.

[0048] The encumbrance of the adhesive hygienizing composition for sanitary fixtures according to the present invention mainly depends on the duration of the hygienizing efficacy to be obtained.

[0049] If for the hygienizing of a household WC it can be considered that a hygienizing composition can be subject to discharge water flushings having a volume ranging from 6 to 9 litres for each flushing, the adhesive hygienizing composition according to the present invention formulated as a tablet having a weight of about 20 grams is completely washed away only after about 350-500 flushings, considering that the number of flushings necessary for the complete dewashing also depends on the geometry of the tablet and water flushing mode in the WC.

[0050] The use of the adhesive hygienizing composition according to the present invention for cleaning and/or disinfecting and/or perfuming sanitary fixtures takes place by direct application to the sanitary fixture, to which it adheres without the help of supports and/or containers. For this purpose, the sanitary fixture to which the adhesive hygienizing composition is applied, must be wet, for example, after a water discharge effected before the application of the composition.

[0051] In particular, in order to facilitate the application of the composition to the sanitary fixture, the composition can be equipped with a support, such as for example a thermoformed support made of siliconized plastic and/or teflon and/or colaminated materials, drawn siliconized paper, from which the composition can be easily detached, possibly with specific elements which facilitate its application on the wall of the sanitary fixture.

Claims

1. An adhesive hygienizing composition, directly applicable to a sanitary fixture to which it adheres without the help of supports and/or containers, for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures, having a maximum content of water of 2.5%, comprising:

   i) from 20% to 70% of a mixture of polyalkoxyalkanes and vinyl methyl ether/maleic acid copolymers as an adhesion promoter;
   ii) from 20% to 50% of at least one surfactant selected from anionic and/or amphoteric and/or cationic surfactants,
   iii) disinfecting and/or perfuming agents,

   (said percentages being expressed as percentages by weight with respect to the total weight of the composition).

2. The composition according to claim 1, **characterized in that** the polyalkoxy group of the polyalkoxyalkane is polyethoxy and the number of ethoxy groups ranges from 15 to 55, preferably from 25 to 45, even more preferably from 20 to 30.

3. The composition according to claim 1 or 2, **characterized in that** the alkyl radical of the polyalkoxyalkane has at least 12 carbon atoms, preferably from 16 to 30 carbon atoms.

4. The composition according to claim 1, **characterized in that** said polyalkoxyalkanes of component i) are selected from ethoxylated alcohol with a chain of 22 carbon atoms (C_{22}) and with 30 ethoxy groups, ethoxylated alcohol ($C_{16/18}$) with 25 ethoxy groups and/or mixtures thereof, preferably ethoxylated alcohol with a chain of 22 carbon atoms (C_{22}) and with 30 ethoxy groups.

5. The composition according to claim 1, **characterized in that** component ii) is an anionic surfactant selected from sodium dodecylbenzenesulfonate, sodium alkane sulfonates, alkyl sulfates, alkylether sulfates, sulfonated alpha-olefins, sulfated alcohol ethers, alkylsulfosuccinates and/or mixtures thereof.

6. The composition according to claim 1, **characterized in that** component ii) is TEA laurylsulfate.

7. The composition according to claim 1, **characterized in that** component ii) is a cationic surfactant, for example a quaternary ammonium salt.

8. The composition according to claim 1, **characterized in that** component ii) is an amphoteric surfactant selected from alkyl-betaines and/or alkylamido-betaines and/or alkylamino-oxides.

9. The composition according to claim 1, **characterized in that** it comprises a polyhydroxyl compound as component iv).

10. The composition according to the preceding claim, **characterized in that** component iv) is selected from glycerin, polyethylene glycol, 1,3-dihydroxypropane, 1,3-or 1,4-dihydroxybutane, 1,3-dihydroxyisobutane, pentaerythritol, 1,2-dihydroxypropane, 1,2- or 2,3-dihydroxybutane, 1,2-dihydroxyisobutane, diethylene glycol, triethylene glycol.

11. The composition according to the previous claim, **characterized in that** component iv) is glycerin and/or polyethylene glycol and/or mixtures thereof.

12. The composition according to claim 1, **characterized in that** it comprises dyes and/or cleaning aids and/or foaming agents and/or thickening agents as component v).

13. The composition according to the preceding claim, **characterized in that** the cleaning aids of component v) are a mixture of gram-positive micro-organisms and/or biological agents capable of producing said micro-organisms in a concentration ranging from 10^4 to 10^{12} cfu/g, said micro-organisms belonging to the species *Bacillus subtilis, Bacillus licheniformis, Bacillus sphaericus, Bacillus thuringensis* and/or *Paenicillium camenbertii,* preferably belonging to the species *Bacillus subtilis* and/or *Bacillus licheniformis* in a concentration ranging from 10^6 to 10^{10} cfu/g.

14. The composition according to claim 1, **characterized in that** component i) is present in a quantity ranging from 30% to 70% by weight with respect to the total weight of the composition, preferably from 45% to 60%.

15. The composition according to claim 1, **characterized in that** component ii) is present in a quantity ranging from 30% to 40% by weight with respect to the total weight of the composition.

16. The composition according to claim 1, **characterized in that** the perfuming agents of component iii) are present in a quantity ranging from 1% to 15% by weight with respect to the total weight of the composition, preferably from 4% to 10%.

17. The composition according to claim 9, **characterized in that** component iv) is present in a quantity ranging from 1% to 10% by weight with respect to the total weight of the composition, preferably from 2% to 6%.

18. The composition according to claim 12, **characterized in that** the cleaning aids of component v) are present in a quantity ranging from 0.1% to 10% by weight with respect to the total weight of the composition, preferably from 0.5 to 5%.

19. The composition according to any of the claims from 1 to 18, **characterized in that** said composition is in solid form.

20. Use of a composition according to any of the claims from 1 to 19, for the cleaning and/or disinfecting and/or perfuming of a sanitary fixture.

21. A process for the preparation of an adhesive hygienizing composition for the cleaning and/or disinfecting and/or perfuming of sanitary fixtures, said composition having a maximum content of water of 2.5% and comprising:

i) from 20% to 70% of a mixture of polyalkoxyalkanes and vinyl methyl ether/maleic acid copolymers as an adhesion promoter;
ii) from 20% to 50% of at least one surfactant selected from anionic and/or amphoteric and/or cationic surfactants;
iii) disinfecting and/or perfuming agents;

said process comprising the following operational phases:

- heating component i) to a temperature higher than its melting point;
- incorporating components ii) and iii),
- homogenizing the composition by mixing to a temperature ranging from 45°C to 65°C for a time ranging from 5 minutes to 30 minutes,
- pouring the composition into a container,
- letting the composition cool until solidification.

22. The process according to claim 21, **characterized in that** the composition is a composition according to any of the claims from 2 to 19.

23. A process for cleaning and/or disinfecting and/or perfuming a sanitary fixture comprising:

- applying an adhesive hygienizing composition according to any of the claims from 1 to 19 to a wet surface of said sanitary fixture, to which it adheres without the help of supports and/or containers;
- flushing said composition by a flow of discharge water for cleaning and/or disinfecting and/or perfuming said sanitary fixture.

24. The process according to claim 23, **characterized in that** said surface of the sanitary is wet following a discharge of water effected before the application of the composition.

Patentansprüche

1. Adhäsive Hygienisierungs-Zusammensetzung, die unmittelbar auf eine Sanitärvorrichtung aufbringbar ist, an welcher sie ohne Zuhilfenahme von Haltern und/oder Behältern haftet, zur Reinigung und/oder Desinfektion und/oder Parfümierung von Sanitärvorrichtungen, mit einem maximalen Wasser-Gehalt von 2,5%, umfassend:

i) 20% bis 70% einer Mischung aus Polyalkoxyalkanen und Vinylmethylether/Maleinsäure-Copolymeren als ein Haftvermittler;

ii) 20% bis 50% zumindest eines Tensids, ausgewählt aus anionischen und/oder amphoterischen und/oder kationischen Tensiden,
iii) Desinfektionsmittel und/oder Duftstoffe,

(wobei die Prozentwerte in Gewichtsprozent, bezogen auf das Gesamtgewicht der Zusammensetzung, ausgedrückt sind).

2. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Polyalkoxy-Gruppe des Polyalkoxyalkans Polyethoxy- ist und die Anzahl an Ethoxy-Gruppen im Bereich von 15 bis 55, bevorzugt von 25 bis 45, noch bevorzugter von 20 bis 30 liegt.

3. Zusammensetzung nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Alkyl-Rest des Polyalkoxyalkans mindestens 12 Kohlenstoffatome, bevorzugt 16 bis 30 Kohlenstoffatome, aufweist.

4. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Polyalkoxyalkane der Komponente i) ausgewählt sind aus ethoxyliertem Alkohol mit einer Kette von 22 Kohlenstoffatomen (C_{22}) und mit 30 Ethoxy-Gruppen, ethoxyliertem Alkohol ($C_{16/18}$) mit 25 Ethoxy-Gruppen und/oder Mischungen davon, bevorzugt ethoxylierter Alkohol mit einer Kette von 22 Kohlenstoffatomen (C_{22}) und mit 30 Ethoxy-Gruppen.

5. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Komponente ii) ein anionisches Tensid ist, ausgewählt aus Natriumdodecylbenzolsulfonat, Natriumalkansulfonaten, Alkylsulfaten, Alkylethersulfaten, sulfonierten alpha-Olefinen, sulfatierten Alkoholethern, Alkylsulfosuccinaten und/oder Mischungen daraus.

6. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** Komponente ii) TEA Laurylsulfat ist.

7. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** Komponente ii) ein kationisches Tensid, z. B. ein quaternäres Ammoniumsalz, ist.

8. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** Komponente ii) ein amphoteres Tensid ist, ausgewählt aus Alkyl-Betainen und/oder Alkylamido-Betainen und/oder Alkylamino-Oxiden.

9. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie eine Polyhydroxyl-Verbindung als Komponente iv) umfasst.

10. Zusammensetzung nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** Komponente iv) ausgewählt ist aus Glycerol, Polyethylenglycol, 1,3-Dihydroxypropan, 1,3- oder 1,4-Dihydroxybutan, 1,3-Dihydroxyisobutan, Pentaerythritol, 1,2-Dihydroxypropan, 1,2- oder 2,3-Dihydroxybutan, 1,2-Dihydroxyisobutan, Diethylenglycol, Triethylenglycol.

11. Zusammensetzung nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** Komponente iv) Glycerol und/oder Polyethylenglycol und/oder Mischungen daraus ist.

12. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie Farbstoffe und/oder Reinigungshilfsmittel und/oder Schaummittel und/oder Verdickungsmittel als Komponente v) umfasst.

13. Zusammensetzung nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** die Reinigungshilfsmittel von Komponente v) eine Mischung aus Grampositiven Mikroorganismen und/oder biologischen Wirkstoffen, die fähig sind, diese Mikroorganismen in einer Konzentration im Bereich von 10^4 bis 10^{12} KbE/g (cfu/g) zu erzeugen, ist, wobei die Mikroorganismen zu den Spezies *Bacillus subtilis, Bacillus licheniformis, Bacillus sphaericus, Bacillus thuringensis und/oder Paenicillium camenbertii gehören,* vorzugsweise zu der Spezies *Bacillus subtilis* und/oder *Bacillus licheniformis* in einer Konzentration im Bereich von 10^6 bis 10^{10} KbE/g (cfu/g) gehören.

14. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** Komponente i), bezogen auf das Gesamtgewicht der Zusammensetzung, in einer Menge im Bereich von 30 Gewichts-% bis 70 Gewichts-%, bevorzugt von 45 Gewichts-% bis 60 Gewichts-%, vorliegt.

15. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** Komponente ii) in einer Menge im Bereich von 30 Gewichts-% bis 40 Gewichts-%, bezogen auf das Gesamtgewicht der Zusammensetzung, vorliegt.

16. Zusammensetzung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Duftstoffe von Komponente iii), bezogen auf das Gesamtgewicht der Zusammensetzung, in einer Menge im Bereich von 1 Gewichts-% bis 15 Gewichts-%, bevorzugt von 4 Gewichts-% bis 10 Gewichts-%, vorliegen.

17. Zusammensetzung nach Anspruch 9, **dadurch gekennzeichnet, dass** Komponente iv), bezogen auf das Gesamtgewicht der Zusammensetzung, in einer Menge im Bereich von 1 Gewichts-% bis 10 Gewichts-%, bevorzugt von 2 Gewichts-% bis 6 Ge-

wichts-%, vorliegt.

18. Zusammensetzung nach Anspruch 12, **dadurch gekennzeichnet, dass** die Reinigungshilfsstoffe von Komponente v), bezogen auf das Gesamtgewicht der Zusammensetzung, in einer Menge im Bereich von 0,1 Gewichts-% bis 10 Gewichts-%, bevorzugt von 0,5 bis 5 Gewichts-% vorliegen.

19. Zusammensetzung nach einem der Ansprüche 1 bis 18, **dadurch gekennzeichnet, dass** die Zusammensetzung in fester Form vorliegt.

20. Verwendung einer Zusammensetzung gemäß einem der Ansprüche 1 bis 19 zur Reinigung und/der Desinfektion und/oder Parfümierung einer Sanitärvorrichtung.

21. Verfahren zur Herstellung einer adhäsiven Hygienisierungs-Zusammensetzung für die Reinigung und/der Desinfektion und/oder Parfümierung von Sanitärvorrichtungen, wobei die Zusammensetzung einen maximalen Wasser-Gehalt von 2,5% aufweist und umfasst:

i) 20% bis 70% einer Mischung aus Polyalkoxyalkanen und Vinylmethylether/Maleinsäure-Copolymeren als ein Haftvermittler;
ii) 20% bis 50% zumindest eines Tensids, ausgewählt aus anionischen und/oder amphoterischen und/oder kationischen Tensiden,
iii) Desinfektionsmittel und/oder Duftstoffe;

wobei das Verfahren die folgenden operativen Phasen umfasst:

- Heizen von Komponente i) auf eine Temperatur, die höher ist als ihr Schmelzpunkt;
- Inkorporieren von Komponenten ii) und iii),
- Homogenisieren der Zusammensetzung durch Mischen bei einer Temperatur im Bereich von 45°C bis 65°C für eine Zeit im Bereich von 5 Minuten bis 30 Minuten,
- Schütten der Zusammensetzung in einen Behälter,
- Abkühlen-Lassen der Zusammensetzung bis zur Verfestigung.

22. Verfahren nach Anspruch 21, **dadurch gekennzeichnet, dass** die Zusammensetzung eine Zusammensetzung gemäß einem der Ansprüche 2 bis 19 ist.

23. Verfahren zur Reinigung und/oder Desinfektion und/oder Parfümierung einer Sanitärvorrichtung umfassend:

- Aufbringen einer adhäsiven Hygienisierungs-Zusammensetzung gemäß einem der Ansprüche 1 bis 19 auf eine nasse Oberfläche der Sanitärvorrichtung, an welcher sie ohne Zuhilfenahme von Haltern und/oder Behältern haftet;
- Bespülen der Zusammensetzung durch einen Ablaufwasser-Fluss zur Reinigung und/oder Desinfektion und/oder Parfümierung der Sanitärvorrichtung.

24. Verfahren nach Anspruch 23, **dadurch gekennzeichnet, dass** die Oberfläche der Sanitärvorrichtung im Anschluss an einen Ablauf von Wasser, der vor der Anwendung der Zusammensetzung getätigt wurde, nass ist.

Revendications

1. Composition adhésive hygiénisante, directement applicable sur un appareil sanitaire auquel elle adhère sans l'aide de supports et/ou de récipients, pour nettoyer et/ou désinfecter et/ou parfumer les appareils sanitaires, ayant une teneur maximale en eau de 2,5 %, comprenant :

i) de 20 % à 70 % d'un mélange de polyalcoxyalcanes et de copolymères de vinylméthyléther/acide maléique en tant que promoteur d'adhérence ;
ii) de 20 % à 50 % d'au moins un tensioactif choisi parmi les tensioactifs anioniques et/ou amphotères et/ou cationiques ;
iii) des agents désinfectants et/ou parfumants,

(lesdits pourcentages étant exprimés en pourcentages en poids, par rapport au poids total de la composition).

2. Composition selon la revendication 1, **caractérisée en ce que** le groupe polyalcoxy du polyalcoxyalcane est un polyéthoxy et le nombre de groupes éthoxy s'échelonne de 15 à 55, de préférence de 25 à 45, de manière davantage préférée de 20 à 30.

3. Composition selon la revendication 1 ou 2, **caractérisée en ce que** le radical alkyle du polyalcoxyalcane comprend au moins 12 atomes de carbone, de préférence de 16 à 30 atomes de carbone.

4. Composition selon la revendication 1, **caractérisée en ce que** lesdits polyalcoxyalcanes du composant i) sont choisis parmi un alcool éthoxylé avec une chaîne de 22 atomes de carbone (C_{22}) et avec 30 groupes éthoxy, un alcool éthoxylé ($C_{16/18}$) avec 25 groupes éthoxy et/ou des mélanges de ceux-ci, de préférence un alcool éthoxylé avec une chaîne de 22 atomes de carbone (C_{22}) et avec 30 groupes éthoxy.

5. Composition selon la revendication 1, **caractérisée en ce que** le composant ii) est un tensioactif anionique choisi parmi le dodécylbenzènesulfonate de sodium, les alcanesulfonates de sodium, les alkylsulfates, les alkyléthersulfates, les alpha-oléfines sulfonées, les alcool-éthers sulfonés, les alkylsulfosuccinates et/ou les mélanges de ceux-ci.

6. Composition selon la revendication 1, **caractérisée en ce que** le composant ii) est le laurylsulfate de TEA.

7. Composition selon la revendication 1, **caractérisée en ce que** le composant ii) est un tensioactif cationique, par exemple un sel d'ammonium quaternaire.

8. Composition selon la revendication 1, **caractérisée en ce que** le composant ii) est un tensioactif amphotère choisi parmi les alkyl-bétaïnes et/ou les alkylamido-bétaïnes et/ou les alkylamino-oxydes.

9. Composition selon la revendication 1, **caractérisée en ce qu'**elle comprend un composé polyhydroxyle en tant que composant iv).

10. Composition selon la revendication précédente, **caractérisée en ce que** le composant iv) est choisi parmi la glycérine, le polyéthylène glycol, le 1,3-dihydroxypropane, le 1,3- ou le 1,4-dihydroxybutane, le 1,3-dihydroxyisobutane, le pentaérythritol, le 1,2-dihydroxypropane, le 1,2- ou le 2,3-dihydroxybutane, le 1,2-dihydroxyisobutane, le diéthylène glycol, le triéthylène glycol.

11. Composition selon la revendication précédente, **caractérisée en ce que** le composant iv) est la glycérine et/ou le polyéthylène glycol et/ou des mélanges de ceux-ci.

12. Composition selon la revendication 1, **caractérisée en ce qu'**elle comprend des colorants et/ou des auxiliaires de nettoyage et/ou des agents moussants et/ou des agents épaississants en tant que composant v).

13. Composition selon la revendication précédente, **caractérisée en ce que** les auxiliaires de nettoyage du composant v) sont un mélange de micro-organismes gram-positifs et/ou d'agents biologiques capables de produire lesdits micro-organismes dans une concentration s'échelonnant de 10^4 à 10^{12} cfu/g, lesdits micro-organismes appartenant aux espèces *Bacillus subtilis, Bacillus licheniformis, Bacillus sphaericus, Bacillus thuringensis* et/ou *Paenicillium camenbertii,* appartenant de préférence aux espèces *Bacillus subtilis* et/ou *Bacillus licheniformis*, dans une concentration s'échelonnant de 10^6 à 10^{10} cfu/g.

14. Composition selon la revendication 1, **caractérisée en ce que** le composant i) est présent en une quantité s'échelonnant de 30 % à 70 % en poids, par rapport au poids total de la composition, de préférence de 45 % à 60 %.

15. Composition selon la revendication 1, **caractérisée en ce que** le composant ii) est présent en une quantité s'échelonnant de 30 % à 40 % en poids, par rapport au poids total de la composition.

16. Composition selon la revendication 1, **caractérisée en ce que** les agents parfumants du composant iii) sont présents en une quantité s'échelonnant de 1 % à 15 % en poids, par rapport au poids total de la composition, de préférence de 4 % à 10 %.

17. Composition selon la revendication 9, **caractérisée en ce que** le composant iv) est présent en une quantité s'échelonnant de 1 % à 10 % en poids, par rapport au poids total de la composition, de préférence de 2 % à 6 %.

18. Composition selon la revendication 12, **caractérisée en ce que** les auxiliaires de nettoyage du composant v) sont présents en une quantité s'échelonnant de 0,1 % à 10 % en poids, par rapport au poids total de la composition, de préférence de 0,5 % à 5 %.

19. Composition selon l'une quelconque des revendications 1 à 18, **caractérisée en ce que** ladite composition est sous forme solide.

20. Utilisation d'une composition selon l'une quelconque des revendications 1 à 19, pour nettoyer et/ou désinfecter et/ou parfumer un appareil sanitaire.

21. Procédé de préparation d'une composition adhésive hygiénisante, pour nettoyer et/ou désinfecter et/ou parfumer des appareils sanitaires, ladite composition ayant une teneur maximale en eau de 2,5 % et comprenant :

    i) de 20 % à 70 % d'un mélange de polyalcoxyalcanes et de copolymères de vinylméthyléther/acide maléique en tant que promoteur d'adhérence ;
    ii) de 20 % à 50 % d'au moins un tensioactif choisi parmi les tensioactifs anioniques et/ou amphotères et/ou cationiques ;
    iii) des agents désinfectants et/ou parfumants ;

    ledit procédé comprenant les phases opérationnelles suivantes :

    - chauffer le composant i) à une température supérieure à son point de fusion ;
    - incorporer les composants ii) et iii),

- homogénéiser la composition par mélange à une température s'échelonnant de 45 °C à 65 °C pendant un temps s'échelonnant de 5 minutes à 30 minutes,
- verser la composition dans un récipient,
- laisser refroidir la composition jusqu'à solidification.

22. Procédé selon la revendication 21, **caractérisé en ce que** la composition est une composition selon l'une quelconque des revendications 2 à 19.

23. Procédé pour nettoyer et/ou désinfecter et/ou parfumer un appareil sanitaire, comprenant :

- l'application d'une composition adhésive hygiénisante selon l'une quelconque des revendications 1 à 19 sur une surface mouillée dudit appareil sanitaire, auquel elle adhère sans l'aide de supports et/ou de récipients ;
- la purge de ladite composition par un flux d'eau de décharge pour nettoyer et/ou désinfecter et/ou parfumer ledit appareil sanitaire.

24. Procédé selon la revendication 23, **caractérisé en ce que** ladite surface de l'appareil sanitaire est mouillée après une décharge d'eau réalisée avant l'application de la composition.

REFERENCES CITED IN THE DESCRIPTION

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