

Description

Title of the Invention: FEEL-IMPROVING AGENT FOR FLOORS

Field of the Invention

[0001]

The present invention relates to a feel-improving agent for floors, a treating agent composition for floors, and a method for treating a floor surface.

Background of the Invention

[0002]

In countries and regions where people are often barefoot in their living environments, they daily wipe and clean a floor surface with a mop using cleaning water containing a cleaner composition for floors. Such daily cleaning is sufficient to remove slight dirt such as dirt due to sweat, soil dust and the like. However, when dirt due to oil splattering during cooking, oil derived from foot sweat or the like is altered by heat, light, oxygen in the air and the like into denatured oil and the denatured oil is adhered to a floor surface, the surface becomes sticky and such stickiness cannot be removed simply by wiping with conventional cleaning water. Therefore, it becomes necessary to thoroughly clean the floor in order to remove such stickiness.

[0003]

JP-A 2015-007220 discloses a cleaner composition for hard surfaces such as floors, containing a particular alkyl glycoside, a particular nonionic surfactant, an anionic surfactant, and a fragrance, the composition being excellent in fast-drying properties and finishing properties after cleaning. JP-A 2000-297296 discloses a cleaner excellent in simplicity, containing an alkyl glycoside, a particular bactericidal agent, and a fatty-acid salt, the composition being capable of cleaning and sterilizing a plastic, tile or wooden surface at one time. JP-A 2007-513215 discloses a cleaner composition containing an alkyl glycoside and a particular polymer which serves as a polishing component, the composition having the effect of polishing wooden floor surfaces. JP-A 2004-143251 discloses a resin wax film stripping agent composition containing an alkyl glycoside, amines, and a water-soluble solvent.

Summary of the Invention

[0004]

However, the compositions disclosed in JP-A 2015-007220 and JP-A 2000-297296 are not directed to the cleaning of denatured oil. Even if a floor surface to which denatured oil is adhered is wiped with a mop using cleaning water containing the compositions, the feel of the floor surface is not improved. In addition, the composition disclosed in JP-A 2007-513215 is a

composition for enhancing the gloss of wooden floors with a particular polymer which serves as a polishing component, and it is not suggested that the feel of a floor surface to which denatured oil is adhered is improved by a simple daily treatment of wiping with water using a treating agent for floors which does not contain such a polishing component. The composition disclosed in JP-A 2004-143251 contains amines and therefore, is alkaline, and in addition, it is a resin wax stripping agent and requires a rinsing process. Thus, it does not improve the feel of a floor surface to which denatured oil is adhered.

[0005]

An object of the present invention is to provide a feel-improving agent for floors, a treating agent composition for floors, and a method for treating a floor surface, wherein the feel of a floor surface to which denatured oil such as heat-denatured oil is adhered is improved to be non-sticky and smooth by a simple treatment of just coating the floor surface with the composition and drying. The denatured oil as used herein refers to oil which contains an oily component altered by the action of heat, sunlight, oxygen in the air and the like. In addition, the heat-denatured oil refers to oil which is denatured with heat, in other words, contains an oil component oxidized with heat.

[0006]

The present invention relates to a feel-improving agent for floors composed of (A) an alkyl glycoside surfactant.

[0007]

In addition, the present invention relates to a treating agent composition for floors containing: (A) an alkyl glycoside surfactant [hereinafter, referred to as component (A)]; optionally (B) a surfactant other than component (A) [hereinafter, referred to as component (B)]; and water, wherein $(A)/[(A)+(B)]$, the mass ratio of the content of component (A) to the total contents of components (A) and (B) is more than 0.55 and the pH at 30°C is 4 or more and less than 9.

[0008]

In addition, the present invention relates to a method for treating a floor surface including: coating a floor with a composition containing (A) an alkyl glycoside surfactant in an amount of 5 ppm or more and 1000 ppm or less and water; and drying the floor.

[0009]

The present invention provides a feel-improving agent for floors, a treating agent composition for floors, and a method for treating a floor surface, wherein the feel of a floor surface to which denatured oil such as heat-denatured oil is adhered is improved to be non-sticky and smooth by a simple treatment of just coating the floor surface with the composition and

drying. Further, according to the method for treating a floor surface of the present invention, as the feel of a floor surface to which denatured oil is adhered can be improved to be non-sticky and smooth by just coating the floor surface with the composition and drying, the cleaning can be finished without wiping with water.

Embodiments of the Invention

[0010]

[Feel-Improving Agent for Floors]

The present invention is a feel-improving agent for floors composed of component (A).

[0011]

The effect of component (A) of the present invention, i.e., the effect of allowing the feel of a floor surface to be improved to a non-sticky and smooth one has not been able to be fully clarified. However, crystals of alkyl glycoside are easily deposited compared to those of other nonionic surfactants and it is assumed that deposited crystals of alkyl glycoside remain on a surface when it is dried, thereby allowing a smooth feel to be imparted thereto.

[0012]

From the viewpoint of improving the feel of the floor, component (A) used in the present invention has a linear or branched alkyl group, preferably a linear alkyl group, with preferably 8 or more and more preferably 10

or more carbons, and preferably 18 or less and more preferably 16 or less carbons, and whose average degree of condensation of sugar is preferably 1 or more; and preferably 3 or less, more preferably 2 or less and further preferably 1.5 or less.

[0013]

As component (A), a compound represented by the following general formula (A1) is suitable,



wherein R^{1a} represents a linear or branched alkyl group with 8 or more and 18 or less carbons; R^{2a} represents an alkylene group with 2 or more and 4 or less carbons; G represents a residue derived from sugar with 5 or 6 carbons; x represents an average number of 0 or more and 5 or less; and y represents an average number of 1 or more and 3 or less.

[0014]

In the general formula (A1), R^{1a} is a linear or branched alkyl group and preferably a linear alkyl group with 8 or more and preferably 10 or more carbons; and 18 or less, preferably 16 or less and more preferably 14 or less carbons from the viewpoint of improving the feel of the floor. In addition, the alkylene group represented by R^{2a} is preferably an alkylene group with 2 carbons from the viewpoint of improving the feel of the floor. Further, the structure of the residue derived from sugar with 5 or 6 carbons represented by G is determined

according to the monosaccharide or di- or higher saccharide used therein. Examples of G include: as for monosaccharides, residues derived from glucose, galactose, xylose, mannose, lyxose, arabinose, fructose or a mixture thereof, and the like; and as for di- or higher saccharides, residues derived from maltose, xylobiose, isomaltose, cellobiose, gentiobiose, lactose, sucrose, nigerose, turanose, raffinose, gentianose, menthitose or a mixture thereof, and the like. In terms of improving the feel of the floor and in terms of availability and cost performance, among these, glucose and fructose, which are monosaccharides, and maltose and sucrose, which are di- or higher saccharides, are preferably used as raw materials.

[0015]

In addition, x in the general formula (A1) is the average number of added moles of OR^{2a} . It is preferably 0 or more, and preferably 5 or less, more preferably 3 or less and further preferably 1 or less, and may also be 0. In order to enhance the crystallinity, 0 is most suitable. The water solubility and crystallinity of component (A) can be adjusted by the value of x. That is, there is a tendency for the water solubility and crystallinity of component (A) to increase and decrease, respectively, as the value of x becomes larger.

[0016]

In addition, when the average value of y in the general formula (A1) is larger than 1, that is, when the hydrophilic group of component (A) is a sugar chain of a di- or higher saccharide, the type of bonding of the sugar chain can include 1-2, 1-3, 1-4, 1-6 bond, or α -, β -pyranoside or furanoside bond, and any mixture thereof, i.e., mixed types of bonding thereof.

[0017]

The average value of y in the general formula (A1) is 1 or more, and 3 or less, preferably 2 or less and more preferably 1.5 or less. The value of y (the average degree of condensation of sugar) is measured by $^1\text{H-NMR}$. For a specific measuring method, see line 26 in column 10 on page 6 to line 15 in column 11 on page 7 in JP-A H8-53696.

[0018]

If the feel-improving agent for floors composed of component (A) of the present invention is dissolved in a solvent such as water, and a floor surface to which denatured oil is adhered is coated with it and dried, the feel of the floor surface can be improved to be non-sticky and smooth.

[0019]

[Treating Agent Composition for Floors]

The present invention is a treating agent composition for floors containing component (A), optional component (B) and water, wherein $(A)/[(A)+(B)]$, the mass

ratio of the content of component (A) to the total contents of components (A) and (B) is more than 0.55 and the pH at 30°C is 4 or more and less than 9.

[0020]

In the treating agent composition for floors of the present invention, the contents of other components inhibiting the crystallization of the alkyl glycoside of component (A), e.g., the content of component (B) which is a surfactant other than component (A), need to be restricted. The matters mentioned above for the feel-improving agent for floors of the present invention composed of component (A) can be appropriately applied to the treating agent composition for floors of the present invention. In addition, component (A) in the treating agent composition for floors of the present invention is the same as component (A) described in the feel-improving agent for floors of the present invention.

[0021]

The treating agent composition for floors of the present invention contains component (A) in an amount of preferably 0.01 mass% or more, more preferably 0.1 mass% or more and further preferably 1 mass% or more from the viewpoint of improving the feel of the floor; and preferably 50 mass% or less, more preferably 15 mass% or less, further preferably 10 mass% or less, furthermore preferably 5 mass% or less, furthermore preferably 2.5 mass% or less and furthermore preferably 2 mass% or less

from the viewpoint of a tendency for the smooth feel of the floor to be reduced due to the excessively-high concentration of component (A).

[0022]

While the treating agent composition for floors of the present invention may contain a surfactant other than component (A) as component (B), the content of component (B) is restricted from the viewpoint of the improvement in feel of the floor owing to component (A). In the treating agent composition for floors of the present invention, $(A)/[(A)+(B)]$, the mass ratio of the content of component (A) to the total contents of components (A) and (B) is, from the viewpoint of improving the feel of the floor, more than 0.55, preferably 0.6 or more, more preferably 0.65 or more, further preferably 0.7 or more and furthermore preferably 0.8 or more; and 1 or less, and may also be 1. It is more preferable that the treating agent composition for floors of the present invention does not contain component (B).

[0023]

Considering that imparting bactericidal effect to treating agent compositions for floors is also one of the important needs of people, the treating agent composition for floors of the present invention preferably contains a bactericidal agent. In the treating agent composition for floors of the present invention, component (B) preferably includes a cationic surfactant [hereinafter,

also referred to as component (B1)] in order to impart bactericidal effect.

[0024]

Component (B1) is not particularly limited as long as it imparts bactericidal effect. Examples thereof may include cationic surfactants of quaternary ammonium salt type in which one or two alkyl groups with preferably 8 or more, and preferably 22 or less, more preferably 18 or less and further preferably 16 or less carbons are coupled to the nitrogen atom and the rest of the organic groups coupled to the nitrogen atom includes short-chain alkyl groups or hydroxyalkyl groups with 1 or more and 3 or less carbons or up to 1 benzyl group, and the salt being a hydrochloride salt or a methyl or ethyl sulfate salt.

[0025]

Specifically, one or more selected from dialkyl (the number of carbons of one alkyl group is 8 or more and 18 or less) dimethyl ammonium salt, monoalkyl (8 or more and 18 or less carbons) trimethyl ammonium salt, alkyl (8 or more and 18 or less carbons) dimethyl benzyl ammonium salt and benzethonium salt are suitable for component (B1), and the salt is a hydrochloride salt or a methyl or ethyl sulfate salt. From the viewpoint of the bactericidal activity and the feel of the floor, component (B1) is more preferably an alkyl (12 or more and 16 or less carbons) dimethyl benzyl ammonium salt.

[0026]

When the treating agent composition for floors of the present invention contains component (B1), $(A)/[(A)+(B1)]$, the mass ratio of the content of component (A) to the total contents of components (A) and (B1) is preferably more than 0.55, more preferably 0.6 or more and further preferably 0.65 or more from the viewpoint of improving the feel of the floor; and preferably 0.9 or less, more preferably 0.8 or less and further preferably 0.7 or less from the viewpoint of bactericidal effect. Note that the content of component (B1) is calculated from a content obtained on the assumption that the counter ion of the cationic surfactant is a chloride ion.

[0027]

In general, treating agent compositions for floors often contain one or more surfactants [hereinafter, also referred to as component (B2)] selected from anionic surfactants and nonionic surfactants other than component (A) for the purpose of cleaning dirt which exists on floors. However, the treating agent composition for floors of the present invention preferably does not contain component (B2) since there is a risk that the crystallinity of component (A) is reduced.

[0028]

When the treating agent composition for floors of the present invention contains component (B2) for the

purpose of cleaning and removing denatured oil, $(A)/[(A)+(B2)]$, the mass ratio of the content of component (A) to the total contents of components (A) and (B2) is preferably 0.7 or more, more preferably 0.8 or more, further preferably 0.9 or more and especially preferably 0.99 or more, and preferably less than 1, and may also be 1 from the viewpoint of improving the feel of the floor. Note that when component (B2) includes an anionic surfactant, the content of the anionic surfactant is calculated from a content obtained on the assumption that the anionic surfactant is of an acid type.

[0029]

The treating agent composition for floors of the present invention may contain a fragrance as component (C) from the viewpoint of preference. Component (C) may be a single fragrance component or may be used as a fragrance composition containing a plurality of fragrance components at a particular ratio. As a fragrance component, those described in *Koryo no Kagaku* (written by Ryoichi Akahoshi, edited by The Chemical Society of Japan, Industrial Chemistry Series, published on September 16, 1983), *Gosei Koryo-Kagaku to Shohin Chishiki* (written by Genichi Into, Japan Chemical Daily, published on March 6, 1996), and *Koryo to Choko no Kisochishiki* (written by Motoki Nakajima, Sangyo Tosho Publishing Co., Ltd., published on June 21, 1995) may be used. Component (C)

is preferably excellent in effect of cleaning dirt or effect of suppressing odor generated due to bacteria.

[0030]

Specifically, examples of component (C) may include one or more selected from hydrocarbon-based fragrances, alcohol-based fragrances, ether-based fragrances, aldehyde-based fragrances, ketone-based fragrances, ester-based fragrances, lactone-based fragrances, cyclic ketone-based fragrances and nitrogen-containing fragrances, and preferably one or more selected from hydrocarbon-based fragrances, alcohol-based fragrances and aldehyde-based fragrances.

[0031]

More specifically, fragrances which are preferable for component (C) are preferably one or more fragrances selected from tonalide, oxacyclohexedecene-2-one, Galaxolide, hexyl salicylate, α -hexyl cinnamic aldehyde, 1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-acetonaphthone, amyl salicylate, isocamphylcyclohexanol, cyclohexyl salicylate, terpinolene, limonene, α -amylcinnamic aldehyde, benzyl salicylate, β -pinene, p-t-butylcyclohexyl acetate, o-t-butylcyclohexyl acetate, isononyl acetate, methylionone-G, 1-(2-t-butylcyclohexyloxy)-2-butanol, allyl cyclohexyl propionate allyl, 3,3,5-trimethylcyclohexyl ethyl ether, dimethylbenzyl carbonyl acetate, lilial, γ -undecalactone, β -ionone, terpinyl acetate, tetrahydrolinalol, linalyl

acetate, allyl hexanoate, 3-methyl-5-phenylpentanol, dihydromyrcenol, phenylethyl isobutyrate, tricyclodecenyl propionate, dimethylbenzyl carbinyl acetate, geraniol, 1,8-cineol, methyl β -naphthyl ketone, terpeneol, borneol, linalool, allyl amyl glycolate, methyl dihydrojasmonate, tricyclodecenyl acetate, camphor, benzyl acetate, anisaldehyde, coumarin, heliotropin, eucalyptus oil and ethylene brassylate. In particular, among these fragrances, fragrances with log P (octanol/water partition coefficient) of greater than 1 are preferable, and those with log P of greater than 2 are more preferable.

[0032]

From the viewpoint of effect of cleaning dirt and effect of suppressing odor generated due to bacteria, the present invention preferably contains a fragrance composition such as eucalyptus oil as component (C).

[0033]

The treating agent composition for floors of the present invention contains component (C) in an amount of preferably 0.01 mass% or more, more preferably 0.05 mass% or more and further preferably 0.1 mass% or more from the viewpoint of preference; and preferably 1.5 mass% or less, more preferably 1 mass% or less and further preferably 0.8 mass% or less from the viewpoint of the storage stability of the composition.

[0034]

When the treating agent composition for floors of the present invention uses component (C), which is often water-insoluble, it requires careful handling from the viewpoint of storage stability when component (C) is contained. When the treating agent composition for floors of the present invention contains component (C), $(C)/[(A)+(B)]$, the mass ratio of the content of component (C) to the total contents of components (A) and (B) is preferably 0.01 or more, more preferably 0.05 or more and further preferably 0.1 or more; and preferably 1.0 or less, more preferably 0.8 or less and further preferably 0.4 or less from the viewpoint of storage stability and preference.

[0035]

The treating agent composition for floors of the present invention may contain a solvent as component (D) from the viewpoint of the formulation stability of the composition. The solvent is preferably a water-soluble solvent whose solubility in water at 20°C is 5 mass% or more, and one or more solvents selected from alcohol-based solvents and glycol-based solvents having one or more hydroxyl groups are suitable. Specifically, examples thereof include one or more solvents selected from ethanol, isopropyl alcohol, ethylene glycol, propylene glycol, diethylene glycol, dipropylene glycol, glycerin, isoprene glycol, ethylene glycol monoalkyl (4 or more and 8 or less carbons) ether, diethylene glycol

monoalkyl (4 or more and 8 or less carbons) ether, propylene glycol monomethyl ether, propylene glycol monoethyl ether, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol alkyl (1 or more and 4 or less carbons) ether, polyoxyethylene (the average number of added moles of the ethylene oxide is 1 or more and 5 or less) monophenyl ether and monoalkyl (3 or more and 8 or less carbons) glyceryl ether. In the treating agent composition for floors of the present invention, component (D) is preferably polyoxyethylene (the average number of added moles of the ethylene oxide is 1 or more and 5 or less) monophenyl ether, and more preferably diethylene glycol monophenyl ether or phenoxyethanol from the viewpoint of the storage stability of the composition. In addition, as these solvents also have bactericidal effect, antiseptic effect may also be expected.

[0036]

The treating agent composition for floors of the present invention contains component (D) in an amount of preferably 0.05 mass% or more, more preferably 0.1 mass% or more and further preferably 0.5 mass% or more; and preferably 10 mass% or less, more preferably 5 mass% or less and further preferably 2 mass% or less from the viewpoint of the storage stability of the composition. Furthermore, when component (D) is polyoxyethylene (the average number of added moles of the ethylene oxide is 1

or more and 5 or less) monophenyl ether, the treating agent composition for floors of the present invention contains component (D) in an amount of preferably 0.05 mass% or more, more preferably 0.1 mass% or more and further preferably 0.5 mass% or more; and preferably 10 mass% or less, more preferably 5 mass% or less and further preferably 2 mass% or less from the viewpoint of the storage stability of the composition and imparting antiseptic effect.

[0037]

The treating agent composition for floors of the present invention may contain a bactericidal agent as component (E) (provided that components (B1) and (D) are excluded) from the viewpoint of hygiene, which is always required in cleaning operations. Here, as a bactericidal agent of the present invention, those described in Koichi Yoshimura and Hirofumi Takigawa, *koshohin, Iyakuhin, Bohu·Sakkinzai no Kagaku*, Fragrance Journal Ltd., April 10, 1990, pp. 501-564 may be used. Examples thereof are one or more selected from triclosan, bis-(2-pyridylthio-1-oxide) zinc, 2,4,5,6-tetrachloroisophthalonitrile, trichlorocarbanilide, 2-(4-thiocyanomethylthio) benzimidazole, polyhexamethylenebiguanidine hydrochloride, chlorhexidine glucuronate, 8-oxyquinoline and polylysine. Further, triclosans described in JP-A H11-189975 themselves, specifically,

dichlorohydroxydiphenyl ether and monochlorohydroxydiphenyl ether may be used.

[0038]

From the viewpoint of the bactericidal activity, the treating agent composition for floors of the present invention contains component (E) in an amount of preferably 0.001 mass% or more, more preferably 0.01 mass% or more and further preferably 0.1 mass% or more; and preferably 1 mass% or less, more preferably 0.5 mass% or less and further preferably 0.1 mass% or less. Note that the contents of components (B1) and (D) are excluded from the content of component (E).

[0039]

The treating agent composition for floors of the present invention is a liquid composition containing water. The liquid composition may be prepared by either dissolving, dispersing or emulsifying the above-mentioned components in water. As the water, ion exchange water or distilled water from which metal components are removed, sterile water containing hypochlorous acid in which approximately 0.5 ppm or more and 10 ppm or less hypochlorous acid is dissolved or the like may be used. Water is the balance of the composition and contained in an amount that makes the whole 100 mass%.

[0040]

The pH at 30°C of the treating agent composition for floors of the present invention is 4 or more and

preferably 5 or more; and less than 9, preferably 8 or less, more preferably 7 or less and further preferably 6.5 or less from the viewpoint of improving the feel of the floor. As a pH adjuster for adjusting the pH to such values, an inorganic acid selected from sulfuric acid, hydrochloric acid and phosphoric acid, an organic acid selected from citric acid, malic acid, maleic acid, fumaric acid, succinic acid, lactic acid and glycolic acid, or an inorganic alkali agent such as sodium hydroxide, potassium hydroxide, magnesium hydroxide, sodium carbonate, potassium carbonate or the like is used. In the present invention, the cleaner composition preferably has the buffering capacity in terms of maintaining the detergency, and it is suitable to use any of the organic acids mentioned above, preferably citric acid, in combination with any of the inorganic alkali agents mentioned above. While the organic acid may be blended to the cleaner composition in the form of a sodium salt or a potassium salt, the content in the form of acid is preferably 0.001 mass% or more and more preferably 0.01 mass% or more; and preferably 1 mass% or less, more preferably 0.5 mass% or less and further preferably 0.1 mass% or less in the treating agent composition for floors of the present invention. The content of the inorganic alkali agent is preferably 0.001 mass% or more and more preferably 0.005 mass% or more; and preferably 0.1 mass% or less and more preferably 0.05

mass% or less in the treating agent composition for floors of the present invention.

[0041]

Even if the treating agent composition for floors of the present invention does not contain a polishing agent such as wax, resin wax, silicone or the like, the feel of a floor surface to which denatured oil such as heat-denatured oil is adhered can be improved to be non-sticky and smooth. That is, from the viewpoint of improving the feel of the floor, in the treating agent composition for floors of the present invention, the proportion of the total contents of component (A) and optional components (B) to (D) to those of all components excluding water is preferably 90 mass% or more, more preferably 93 mass% or more and further preferably 95 mass% or more; and preferably 99.5 mass% or less, more preferably 99 mass% or less and further preferably 98.5 mass% or less. In addition, in the treating agent composition for floors of the present invention, the proportion of the content of component (A) to those of all components excluding water can be selected from 20 mass% or more, further 30 mass% or more, further 40 mass% or more and further 50 mass% or more; and 95 mass% or less, further 80 mass% or less, further 70 mass% or less and further 60 mass% or less from the viewpoint of improving the feel of the floor.

[0042]

The treating agent composition for floors of the present invention is suitable for a composition for wiping floors with water or an article for wiping with water. That is, the composition is suitable for use in quick cleaning of floors of living spaces such as living rooms, rooms, kitchens, bathrooms and toilets and the like. Examples of the floors include a stone floor, a parquet, a tile floor, a linoleum floor and a plastic floor, and preferably the composition is suitable for a tile floor. The feel of a floor surface to which denatured oil such as heat-denatured oil is adhered can be improved to be non-sticky and smooth by a simple treatment of just coating the floor surface with the treating agent composition for floors of the present invention and drying. In addition, since the effect of the present invention is obtained even if the surface is not wiped with water separately (wiped twice), the surface does not need to be wiped with water.

[0043]

When the treating agent composition for floors of the present invention is applied to a slightly soiled floor, it is preferable that the floor surface be coated with a treatment liquid prepared by diluting the composition 50-fold or more and further 80-fold or more, and 200-fold or less and further 150-fold or less with water.

[0044]

In addition, the treating agent composition for floors of the present invention or the treatment liquid prepared by diluting the composition as mentioned above (hereinafter, sometimes simply referred to as a treatment liquid) may also be used as a cleaning article by impregnating a base material with the composition or the liquid. The cleaning article prepared by impregnating the base material with the treating agent composition for floors or the treatment liquid of the present invention is preferable from the viewpoint of workability of cleaning tasks.

[0045]

The base material impregnated with the treating agent composition for floors or the treatment liquid and used for the cleaning article has flexibility and can be impregnated with the treating agent composition for floors or the treatment liquid. It also has a sufficient strength and generates no waste or the like during use. In particular, it is preferable to use a base material that can be impregnated with the below-mentioned amount of treating agent composition for floors or treatment liquid under no load.

[0046]

Examples of such a base material include fiber structures constituted of fibrous materials, e.g., various papers, non-woven fabrics, woven fabrics or knitted fabrics. Examples of fibrous materials

constituting those fiber structures include cellulosic fibers, modified cellulosic fibers, synthetic fibers, a mixture of two or more selected therefrom, and the like.
[0047]

In addition, porous structures (for example, sponge-like structures) with foam dispersed throughout resin can also be used as the base material.

[0048]

In addition, a cleaning method of wiping a floor surface with the cleaning article impregnated with the treating agent composition for floors or the treatment liquid of the present invention is preferable for quick cleaning of a floor surface from the viewpoint of workability of cleaning tasks. The cleaning article impregnated with the treating agent composition for floors or the treatment liquid may be either the one prepared by impregnating a base material with the treating agent composition for floors or the treatment liquid in advance, or the one prepared by impregnating a dry base material with the treating agent composition for floors or the treatment liquid using a spray or the like immediately before use. In addition, a surface to be cleaned may be cleaned with a sprayed cleaning article. The cleaning article impregnated with the treating agent composition for floors or the treatment liquid may be put on a mop-shaped cleaner tool and used, or may be directly held by hand and used for wiping.

[0049]

When the base material is impregnated with the treating agent composition for floors or the treatment liquid in advance, the impregnation rate of the treating agent composition for floors or the treatment liquid per mass of the base material [that is, relative to the mass of a base material in an unimpregnated state (dry state)] is preferably 100 mass% or more and more preferably 150 mass% or more; and preferably 1000 mass% or less, more preferably 400 mass% or less and further preferably 350 mass% or less from the viewpoint of cleaning performance. If the impregnation rate is 100 mass% or more, sufficient cleaning performance against stains or soil dirt is obtained. If the rate is 1000 mass% or less, the amount of the cleaner composition applied to a surface to be cleaned becomes appropriate and no dirt or soil dust remains on the surface to be cleaned, and in addition, the composition can be used for cleaned surfaces made of various materials such as a wood-based material and the like without exerting adverse effect. In terms of further improving cleaning performance, when the base material is a sheet, the basis weight before impregnation with the treating agent composition for floors or the treatment liquid is preferably 40 g/m² or more and more preferably 50 g/m² or more; and preferably 200 g/m² or less and more preferably 150 g/m² or less from the viewpoint of a capacity to retain the treating agent

required for cleaning a certain area and the operability or cost of the sheet.

[0050]

During use of the cleaning article impregnated with the treating agent composition for floors or the treatment liquid, it may be used while the treating agent composition for floors or the treatment liquid of the present invention is separately sprayed to things to be cleaned or the cleaning article. With this usage, a wider area can be cleaned.

[0051]

[Method for Treating Floor Surface]

The present invention is a method for treating a floor surface including: coating a floor with a composition containing component (A) in an amount of 5 ppm or more and 1000 ppm or less and water; and drying the floor. Further, the present invention is a method for treating a floor surface including: coating a floor with a composition containing component (A) in an amount of 5 ppm or more and 1000 ppm or less and water; and drying the floor without wiping with water (wiping twice).

[0052]

The method for treating a floor surface of the present invention may include coating a floor surface with a composition prepared such that the content of component (A) is 5 ppm or more, preferably 50 ppm or more

and more preferably 100 ppm or more, and 1000 ppm or less, preferably 500 ppm or less and more preferably 200 ppm or less. The composition used above is preferably a composition prepared by diluting the treating agent composition for floors of the present invention with water.

[0053]

In the method for treating a floor surface of the present invention, the composition containing component (A) in an amount of 5 ppm or more and 1000 ppm or less and water may be prepared by using the treating agent composition for floors of the present invention. In that case, component (A) and preferred aspects thereof, as well as optional components are the same as the matters mentioned above for the treating agent composition for floors of the present invention. The matters mentioned above for the treating agent composition for floors of the present invention can be appropriately applied to the method for treating a floor surface of the present invention.

[0054]

With reference to the embodiments mentioned above, the present invention further discloses the following feel-improving agents for floors, treating agent compositions for floors, and methods for treating a floor surface.

[0055]

<1>

A feel-improving agent for floors composed of (A) an alkyl glycoside surfactant [hereinafter, referred to as component (A)].

[0056]

<2>

The feel-improving agent for floors according to <1>, wherein component (A) is a linear or branched alkyl group and preferably a linear alkyl group with preferably 8 or more and more preferably 10 or more carbons; and preferably 18 or less and more preferably 16 or less carbons, and is an alkyl glycoside whose average degree of condensation of sugar is preferably 1 or more; and preferably 3 or less, more preferably 2 or less and further preferably 1.5 or less.

[0057]

<3>

The feel-improving agent for floors according to <1> or <2>, wherein component (A) is a compound represented by the following general formula (A1),



wherein R^{1a} represents a linear or branched alkyl group and preferably a linear alkyl group with 8 or more and preferably 10 or more carbons, and 18 or less, preferably 16 or less and more preferably 14 or less carbons; R^{2a} represents an alkylene group with 2 or more and 4 or less carbons and preferably an alkylene group

with 2 carbons; G represents a residue derived from sugar with 5 or 6 carbons and preferably a residue derived from glucose; x represents an average number of 0 or more, and preferably 5 or less, more preferably 3 or less and further preferably 1 or less; and y represents an average number of 1 or more, and 3 or less, preferably 2 or less and more preferably 1.5 or less.

[0058]

<4>

A treating agent composition for floors containing: (A) an alkyl glycoside surfactant [hereinafter, referred to as component (A)]; optionally (B) a surfactant other than component (A) [hereinafter, referred to as component (B)]; and water, wherein $(A)/[(A)+(B)]$, the mass ratio of the content of component (A) to the total contents of components (A) and (B) is more than 0.55 and the pH at 30°C is 4 or more and less than 9.

[0059]

<5>

The treating agent composition for floors according to <4>, wherein component (A) is a linear or branched alkyl group and preferably a linear alkyl group with preferably 8 or more and more preferably 10 or more carbons; and preferably 18 or less and more preferably 16 or less carbons, and is an alkyl glycoside whose average degree of condensation of sugar is preferably 1 or more;

and preferably 3 or less, more preferably 2 or less and further preferably 1.5 or less.

[0060]

<6>

The treating agent composition for floors according to <4> or <5>, wherein component (A) is a compound represented by the following general formula (A1):



wherein R^{1a} represents a linear or branched alkyl group and preferably a linear alkyl group with 8 or more and preferably 10 or more carbons, and 18 or less, preferably 16 or less and more preferably 14 or less carbons; R^{2a} represents an alkylene group with 2 or more and 4 or less carbons and preferably an alkylene group with 2 carbons; G represents a residue derived from sugar with 5 or 6 carbons and preferably a residue derived from glucose; x represents an average number of 0 or more, and preferably 5 or less, more preferably 3 or less and further preferably 1 or less; and y represents an average number of 1 or more, and 3 or less, preferably 2 or less and more preferably 1.5 or less.

[0061]

<7>

The treating agent composition for floors according to any of <4> to <6>, containing component (A) in an amount of preferably 0.01 mass% or more, more preferably 0.1 mass% or more and further preferably 1 mass% or more;

and preferably 50 mass% or less, more preferably 15 mass% or less, further preferably 10 mass% or less, furthermore preferably 5 mass% or less, furthermore preferably 2.5 mass% or less and furthermore preferably 2 mass% or less.

[0062]

<8>

The treating agent composition for floors according to any of <4> to <7>, wherein $(A)/[(A)+(B)]$, the mass ratio of component (A) to the total contents of components (A) and (B) is preferably 0.6 or more, more preferably 0.65 or more, further preferably 0.7 or more and furthermore preferably 0.8 or more.

[0063]

<9>

The treating agent composition for floors according to any of <4> to <7>, wherein $(A)/[(A)+(B)]$, the mass ratio of component (A) to the total contents of components (A) and (B) is 1.

[0064]

<10>

The treating agent composition for floors according to any of <4> to <9>, wherein component (B) includes a cationic surfactant [hereinafter, also referred to as component (B1)].

[0065]

<11>

The treating agent composition for floors according to <10>, wherein component (B1) is a quaternary ammonium salt cationic surfactant in which one or two alkyl groups with preferably 8 or more carbons, and preferably 22 or less, more preferably 18 or less and further preferably 16 or less carbons are coupled to the nitrogen atom, and the rest of the organic group coupled to the nitrogen atom is a short chain alkyl group or a hydroxyalkyl group with 1 or more and 3 or less carbons, or up to 1 benzyl group.

[0066]

<12>

The treating agent composition for floors according to <10> or <11>, wherein component (B1) is one or more selected from a dialkyl (the number of carbons of one alkyl group is 8 or more and 18 or less) dimethyl ammonium salt, a monoalkyl (8 or more and 18 or less carbons) trimethyl ammonium salt, an alkyl (8 or more and 18 or less carbons) dimethyl benzyl ammonium salt and a benzethonium salt, and is preferably an alkyl (12 or more and 16 or less carbons) dimethyl benzyl ammonium salt.

[0067]

<13>

The treating agent composition for floors according to any of <10> to <12>, wherein $(A)/[(A)+(B1)]$, the mass ratio of component (A) to the total contents of components (A) and (B1) is preferably more than 0.55,

more preferably 0.6 or more and further preferably 0.65 or more, and preferably 0.9 or less, more preferably 0.8 or less and further preferably 0.7 or less.

[0068]

<14>

The treating agent composition for floors according to any of <10> to <13>, wherein $(A)/[(A)+(B2)]$, the mass ratio of the content of component (A) to the total contents of component (A) and (B2) one or more surfactants selected from anionic surfactants and nonionic surfactants other than component (A) [hereinafter, referred to as component (B2)] is preferably 0.7 or more, more preferably 0.8 or more, further preferably 0.9 or more and especially preferably 0.99 or more, and preferably less than 1.

[0069]

<15>

The treating agent composition for floors according to any of <10> to <13>, wherein $(A)/[(A)+(B2)]$, the mass ratio of the content of component (A) to the total contents of component (A) and (B2) one or more surfactants selected from anionic surfactants and nonionic surfactants other than component (A) [hereinafter, referred to as component (B2)] is 1.

[0070]

<16>

The treating agent composition for floors according to any of <4> to <15>, further containing a fragrance as component (C).

[0071]

<17>

The treating agent composition for floors according to <16>, containing component (C) in an amount of preferably 0.01 mass% or more, more preferably 0.05 mass% or more and further preferably 0.1 mass% or more, and preferably 1.5 mass% or less, more preferably 1 mass% or less and further preferably 0.8 mass% or less.

[0072]

<18>

The treating agent composition for floors according to <16> or <17>, wherein $(C)/[(A)+(B)]$, the mass ratio of the content of component (C) to the total contents of components (A) and (B) is preferably 0.01 or more, more preferably 0.05 or more and further preferably 0.1 or more, and preferably 1.0 or less, more preferably 0.8 or less and further preferably 0.4 or less.

[0073]

<19>

The treating agent composition for floors according to any of <4> to <18>, further containing a solvent as component (D).

[0074]

<20>

The treating agent composition for floors according to <19>, wherein component (D) is a water-soluble solvent whose solubility in water at 20°C is 5 mass% or more.

[0075]

<21>

The treating agent composition for floors according to <19> or <20>, wherein component (D) is one or more solvents selected from ethanol, isopropyl alcohol, ethylene glycol, propylene glycol, diethylene glycol, dipropylene glycol, glycerin, isoprene glycol, ethylene glycol monoalkyl (4 or more and 8 or less carbons) ether, diethylene glycol monoalkyl (4 or more and 8 or less carbons) ether, propylene glycol monomethyl ether, propylene glycol monoethyl ether, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol alkyl (1 or more and 4 or less carbons) ether, polyoxyethylene (the average number of added moles of the ethylene oxide is 1 or more and 5 or less) monophenyl ether and monoalkyl (3 or more and 8 or less carbons) glyceryl ether, and is preferably polyoxyethylene (the average number of added moles of the ethylene oxide is 1 or more and 5 or less) monophenyl ether, and more preferably diethylene glycol monophenyl ether or phenoxyethanol.

[0076]

<22>

The treating agent composition for floors according to any of <19> to <21>, containing component (D) in an amount of preferably 0.05 mass% or more, more preferably 0.1 mass% or more and further preferably 0.5 mass% or more, and preferably 10 mass% or less, more preferably 5 mass% or less and further preferably 2 mass% or less.

[0077]

<23>

The treating agent composition for floors according to any of <19> to <21>, wherein component (D) is polyoxyethylene (the average number of added moles of the ethylene oxide is 1 or more and 5 or less) monophenyl ether, and the content of component (D) is preferably 0.05 mass% or more, more preferably 0.1 mass% or more and further preferably 0.5 mass% or more, and preferably 10 mass% or less, more preferably 5 mass% or less and further preferably 2 mass% or less.

[0078]

<24>

The treating agent composition for floors according to any of <4> to <23>, further containing organic acid and preferably citric acid in an amount of preferably 0.001 mass% or more and more preferably 0.01 mass% or more, and preferably 1 mass% or less, more preferably 0.5 mass% or less and further preferably 0.1 mass% or less in the form of acid.

[0079]

<25>

The treating agent composition for floors according to any of <4> to <24>, further containing an inorganic alkali agent in an amount of preferably 0.001 mass% or more and more preferably 0.005 mass% or more, and preferably 0.1 mass% or less and more preferably 0.05 mass% or less.

[0080]

<26>

The treating agent composition for floors according to any of <19> to <25>, wherein the proportion of the total content of component (A) and optional components (B), (C) and (D) in all components excluding water is preferably 90 mass% or more, more preferably 93 mass% or more and further preferably 95 mass% or more, and preferably 99.5 mass% or less, more preferably 99 mass% or less and further preferably 98.5 mass% or less.

[0081]

<27>

The treating agent composition for floors according to any of <4> to <26>, wherein the proportion of the content of component (A) in all components excluding water is 20 mass% or more, further 30 mass% or more, further 40 mass% or more and further 50 mass% or more, and 95 mass% or less, further 80 mass% or less, further 70 mass% or less and further 60 mass% or less.

[0082]

<28>

A method for treating a floor surface including:
coating a floor surface with a treatment liquid prepared
by diluting the treating agent composition for floors
according to any of <4> to <27> 50-fold or more and
further 80-fold or more, and 200-fold or less and further
150-fold or less with water; and drying the floor
surface.

[0083]

<29>

A method for treating a floor surface including:
coating a floor surface with a treatment liquid prepared
by diluting the treating agent composition for floors
according to any of <4> to <27> 50-fold or more and
further 80-fold or more, and 200-fold or less and further
150-fold or less with water; and drying the floor surface
without wiping with water.

[0084]

<30>

A method for treating a floor surface including:
coating a floor with a composition containing (A) an
alkyl glycoside surfactant [hereinafter, referred to as
component (A)] in an amount of 5 ppm or more and 1000 ppm
or less and water; and drying the floor.

[0085]

<31>

A method for treating a floor surface including:
coating a floor with a composition containing (A) an
alkyl glycoside surfactant [hereinafter, referred to as
component (A)] in an amount of 5 ppm or more and 1000 ppm
or less and water; and drying the floor without wiping
with water.

[0086]

<32>

The method for treating a floor surface according to
<30> or <31>, including coating the floor surface with a
composition prepared such that the content of component
(A) is preferably 50 ppm or more and more preferably 100
ppm or more, and preferably 500 ppm or less and more
preferably 200 ppm or less.

[0087]

<33>

The method for treating a floor surface according to
<30> or <31>, including coating the floor surface with a
composition prepared by diluting the treating agent
composition for floors according to any of <4> to <27>
with water such that the content of component (A) is a
content of 5 ppm or more, preferably 50 ppm or more and
more preferably 100 ppm or more, and 1000 ppm or less,
preferably 500 ppm or less and more preferably 200 ppm or
less.

Examples

[0088]

The treating agent compositions for floors shown in Tables 1 and 2 were prepared by using the blended components listed below, and the following items were evaluated. The results are shown in Tables 1 and 2. The treating agent compositions for floors of Tables 1 and 2 were prepared in the usual manner. That is, components (A), (B), (C) and (D) were added to an appropriate amount of ion exchange water and dissolved therein at room temperature (25 °C) and after that, sodium hydroxide and/or citric acid monohydrate are/is added thereto and the pH (30°C, glass electrode method) was adjusted to the value shown in Tables 1 and 2. Note that all mass% of the blended components in Tables 1 and 2 are numerical values based on the active components.

[0089]

<Blended Components>

Component (A)

·AG: an alkyl glycoside, a compound for which R^{1a} is mixed alkyl groups with 8 or more and 16 or less carbons; G is a residue derived from glucose; x is 0; and y is 1.3 in the general formula (A1).

Component (B)

·cationic surfactant 1: alkyldimethylbenzylammonium chloride having an alkyl group with 12 or more and 16 or less carbons.

Component (C)

·fragrance a: a fragrance composition containing 40 mass% of dihydromyrcenol, 25 mass% of eucalyptus oil, 15 mass% of linalool, 15 mass% of ethylene brassylate and 5 mass% of methyl dihydrojasmonate.

Component (D)

·phenoxyethanol: manufactured by Nippon Nyukazai Co., Ltd.

pH adjusters

·citric acid: citric acid monohydrate

·sodium hydroxide: 48% sodium hydroxide

[0090]

<Evaluation Method>

(1) Feel Evaluation 1

A tile 10 cm×10 cm in size was evenly coated with 200 μ l of rapeseed oil (Yamakei Sangyo Co., Ltd.) and heated in a thermostatic chamber at 90°C for 150 minutes, thereby preparing a model dirt to which heat-denatured oil was adhered. 3 mL of treatment liquid was prepared by diluting a treating agent composition for floors of Table 1 100-fold with water whose hardness was adjusted to 5°dH. KimWipes (trade name) was impregnated therewith, and using it, the tile to which the dirt of heat-denatured oil was adhered was wiped off with only one stroke. After the treatment liquid dried off, 5 skilled panelists evaluated the stickiness of the tile based on the following evaluation criteria twice per person by touching it with their fingers. The results

are shown in Table 1. The 5 skilled panelists judged twice per person based on the following criteria and the average value thereof was determined and adopted in Table 1:

3 points: a floor was not sticky but smooth to the same degree as a portion wiped off with the treatment liquid of Example 1;

2 points: a floor was felt sticky compared to the portion wiped off with the treatment liquid of Example 1;

1 point: a floor was obviously felt sticky compared to the portion wiped off with the treatment liquid of Example 1.

[0091]

[Table 1]

				Example		Comparative example
				1	2	1
Treating agent composition for floors	Blended component (mass%)	(A)	AG	2.1	1.4	1.05
		(B)	Cationic surfactant 1		0.7	1.05
		Citric acid		0.06	0.06	0.06
		Sodium hydroxide		Appropriate amount	Appropriate amount	Appropriate amount
		Water		Balance	Balance	Balance
		Total		100	100	100
	pH (30°C)		6	6	6	
	(A)/[(A)+(B)] (mass ratio)		1.00	0.67	0.50	
Feel evaluation 1				3	2.5	1.3

[0092]

(2) Feel Evaluation 2

Each treating agent composition for floors of Examples 3 to 5 of Table 2 was used for a month instead of usual floor cleaners by ordinary women who routinely wiped floors with mops using floor cleaners commercially available (10 women per treating agent composition for

floors). As the usage, each treating agent composition for floors of Examples 3 to 5 was diluted 100-fold with tap water to prepare a treatment liquid; a mop was impregnated with the liquid; and a floor was wiped with the mop. After one month of use, the number of the women who answered about the feel of the floor after drying off that "the floor after cleaning was felt less sticky but smoother than usual cleaning" was counted. The results are shown in Table 2.

[0093]

[Table 2]

				Example		
				3	4	5
Treating agent composition for floors	Blended component (mass%)	(A)	AG	1.5	1.5	2.2
		(B)	Cationic surfactant 1	0.7		
		(C)	Fragrance a	0.3	0.3	0.3
		(D)	Phenoxy ethanol	0.5	0.5	0.5
		Citric acid		0.06	0.06	0.06
		Sodium hydroxide		Appropriate amount	Appropriate amount	Appropriate amount
		Water		Balance	Balance	Balance
		Total		100	100	100
	pH (30°C)			6	6	6
	(A)/[(A)+(B)] (mass ratio)			0.68	1.00	1.00
Feel exaluation 2 (number of persons)				8/10	10/10	10/10

[0094]

Formulation examples of the treating agent composition for floors of the present invention are shown in Table 3. Each formulation example in Table 3 scores 2.1 points or more in the feel evaluation 1 and is capable of improving the feel of a floor surface to which denatured oil such as heat-denatured oil is adhered so as

to be non-sticky and smooth by a simple treatment of just coating the surface with the composition and drying.

[0095]

[Table 3]

				Formulation example							
				1	2	3	4	5	6	7	8
Treating agent composition for floors	Blended component (mass %)	(A)	AG	1.5	1.5	1.5	1.5	0.9	1	1.2	1.4
		(B)	Cationic surfactant 2	0.7				0.6	0.5	0.3	0.1
		(C)	Fragrance a	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		(D)	Phenoxyethanol	0.5				0.5	0.5	0.5	0.5
			Diethylene glycol monophenyl ether		0.5						
			Diethylene glycol monobutyl ether			0.5					
			Ethanol				0.5				
			Citric acid	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
			Sodium hydroxide	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount
			Water	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
			Total	100	100	100	100	100	100	100	100
			pH (30°C)	6	6	6	6	6	6	6	6
		(A)/[(A)+(B)] (mass ratio)	0.68	1.00	1.00	1.00	0.60	0.67	0.80	0.93	

[0096]

The following was used as cationic surfactant 2 in Table 3:

cationic surfactant 2: alkyltrimethylammonium chloride having an alkyl group with 12 carbons.

CLAIMS

1. A feel-improving agent for floors consisting of (A) an alkyl glycoside surfactant.
2. A treating agent composition for floors comprising:
(A) an alkyl glycoside surfactant [hereinafter, referred to as a component (A)]; optionally (B) a surfactant other than the component (A) [hereinafter, referred to as a component (B)]; and water, wherein $(A)/[(A)+(B)]$, a mass ratio of a content of the component (A) to the total contents of the component (A) and the component (B) is more than 0.55 and pH at 30°C is 4 or more and less than 9.
3. The treating agent composition for floors according to claim 2, wherein the component (B) includes a cationic surfactant.
4. The treating agent composition for floors according to claim 2 or 3, further comprising (C) a fragrance [hereinafter, referred to as a component (C)].
5. The treating agent composition for floors according to any one of claims 2 to 4, further comprising (D) a solvent [hereinafter, referred to as a component (D)].

6. The treating agent composition for floors according to any one of claims 2 to 5, wherein a proportion of a total content of the component (A) in all components excluding water is 90 mass% or more, provided that if the composition contains the optional components (B) to (D), the total content also includes contents thereof.

7. A method for treating a floor surface comprising: coating a floor with a composition containing (A) an alkyl glycoside surfactant in an amount of 5 ppm or more and 1000 ppm or less and water; and drying the floor.

8. A method for treating a floor surface comprising: coating a floor with a composition containing (A) an alkyl glycoside surfactant in an amount of 5 ppm or more and 1000 ppm or less and water; and drying the floor without wiping with water.