The content of each of compounds with the sulfonate group at different positions in component (A) can be measured by a high performance liquid chromatography/mass spectrometer (hereinafter abbreviated as HPLC-MS). The content of each of compounds with the sulfonate group at different positions in the present specification will be determined as the mass ratio based the HPLC-MS peak area of the compound with the sulfonate group at each position in all HAS forms of component (A).

In the specification, HAS is a hydroxyalkane sulfonate, i.e., a hydroxy form of an internal olefin sulfonate, among compounds produced by sulfonating an internal olefin.

In the present invention, an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 2 or higher and position 4 or less (IO-1S) refers to a sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 2 or higher and position 4 or less, among HAS forms having 17 or more and 24 or less carbon atoms.

On the other hand, an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 5 or higher (IO-2S) refers to a sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate acid group at position 5 or higher,

Examples of component (C) include one or more surfactants selected from the following component (c1), component (c2), component (c3) and component (c4):

component (c1): alkyl or alkenyl sulfate,

component (c2): polyoxyalkylene alkyl ether sulfate or polyoxyalkylene alkenyl ether sulfate,

component (c3): an anionic surfactant having a sulfonate group (except for component (A)), and

component (c4): a fatty acid or a salt thereof.

[0051]

Specific examples of component (c1) include one or more anionic surfactants selected from alkyl sulfates having an alkyl group having 10 or more and 18 or less carbon atoms and alkenyl sulfates having an alkenyl group having 10 or more and 18 or less carbon atoms. From the viewpoint of improving the detergent property, component (c1) is preferably one or more anionic surfactants selected from alkyl sulfates having an alkyl group having 12 or more and 14 or less carbon atoms, and more preferably one or more anionic surfactants selected from sodium alkyl sulfates having an alkyl group having 12 or more and 14 or less carbon atoms.

[0052]

Specific examples of component (c2) include one or more anionic surfactants selected from a polyoxyalkylene alkyl ether sulfate having an alkyl group having 10 or more and 18 or less carbon atoms and having an average number of

artificially sebum-stained cloth by applying the model artificially sebum-staining liquid to the cloth was carried out with a cell capacity of the gravure roll of 58 cm^3/m^2, a coating speed of 1.0 m/min, a drying temperature of 100°C and a drying time of 1 minute. The cloth used was Cotton 2003 (manufactured by Tanigashira Shoten).

* The composition of the model artificially sebum-staining liquid: lauric acid: 0.4% by mass, myristic acid: 3.1% by mass, pentadecanoic acid: 2.3% by mass, palmitic acid: 6.2% by mass, heptadecanoic acid: 0.4% by mass, stearic acid: 1.6 % by mass, oleic acid: 7.8% by mass, triolein: 13.0% by mass, n-hexadecyl palmitate: 2.2% by mass, squalene: 6.5% by mass, egg white lecithin liquid crystal product: 1.9% by mass, Kanuma red clay: 8.1% by mass, carbon black: 0.01% by mass and water: balance (total 100% by mass).

[0105]

(2) Evaluation of detergency

Five cut pieces of the model artificially sebum-stained cloth (6 cm × 6 cm) as prepared above were washed at 85 rpm in Terg-O-Tometer (MS-8212, manufactured by Ueshima Seisakusho Co., Ltd.) for ten minutes. For washing conditions, washing was carried out at a water temperature of 20°C by pouring municipal water (3.5°dH, 20°C) so that each of the concentrations of the liquid detergent composition for textile products shown in Table

CLAIMS

1. A liquid detergent composition for textile products comprising the following component (A) in an amount of 10% by mass or more and 60% by mass or less, the following component (B), and water:

component (A): an internal olefin sulfonate having 17 or more and 24 or less carbon atoms, wherein a mass ratio of an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 2 or higher and position 4 or lower (IO-1S) to an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 5 or higher (IO-2S), (IO-1S)/(IO-2S), is 0.75 or more and 5.5 or less; and

component (B): an organic solvent having a hydroxy group.

2. The liquid detergent composition for textile products according to claim 1, wherein (IO-2S) is an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 5 or higher and position 9 or lower.

3. The liquid detergent composition for textile products according to claim 1 or 2, wherein the content

of (IO-2S) in the component (A) is 60% by mass or less and more than 0% by mass.

4. The liquid detergent composition for textile products according to any one of claims 1 to 3, wherein a percentage of the component (A) in all anionic surfactants contained in the liquid detergent composition for textile products is 60% by mass or more and 100% by mass or less.

5. The liquid detergent composition for textile products according to any one of claims 1 to 4, wherein the content of the component (B) is 4% by mass or more and 35% by mass or less.

6. The liquid detergent composition for textile products according to any one of claims 1 to 5, wherein content of component (B)/content of component (A), which is a mass ratio of the content of the component (B) to the content of the component (A) is 0.1 or more and 1 or less.

7. The liquid detergent composition for textile products according to any one of claims 1 to 6, wherein the component (B) is one or more selected from the following components (B1) to (B4):

component (B1): a monohydric alcohol having 2 or more and 6 or less carbon atoms;

component (B2): an alcohol having 2 or more and 12 or less carbon atoms and 2 or more and 12 or less hydroxy groups;

component (B3): an organic solvent having a hydrocarbon group with 1 or more and 8 or less carbon atoms, an ether group and a hydroxy group (provided that an aromatic group is excluded from the hydrocarbon group); and

component (B4): an organic solvent having an optionally partially substituted aromatic group, an ether group and a hydroxy group.

8. The liquid detergent composition for textile products according to any one of claims 1 to 7, wherein ClogP of the component (B) is -1.5 or more and 2 or less.

9. The liquid detergent composition for textile products according to claim 7 or 8, wherein the percentage of the content of the organic solvent selected from the component (B3) and the component (B4) and having the ClogP of 0.6 or more and 1.5 or less in the overall component (B) is 40% by mass or more and 100% by mass or less.

10. The liquid detergent composition for textile products according to any one of claims 7 to 9, wherein the monohydric alcohol having 2 or more and 6 or less carbon atoms which is the component (B1) is a compound selected from ethanol, 1-propanol and 2-propanol.

11. The liquid detergent composition for textile products according to any one of claims 7 to 10, wherein the alcohol having 2 or more and 12 or less carbon atoms and 2 or more and 12 or less hydroxy groups which is the component (B2) is a compound selected from ethylene glycol, propylene glycol, butylene glycol, hexylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, dipropylene glycol, tripropylene glycol and glycerol.

12. The liquid detergent composition for textile products according to any one of claims 7 to 11, wherein the organic solvent having a hydrocarbon group having 1 or more and 8 or less carbon atoms, an ether group and a hydroxy group which is the component (B3) is a compound selected from diethylene glycol monomethyl ether, diethylene glycol dimethyl ether, triethylene glycol monomethyl ether, diethylene glycol monoethyl ether, diethylene glycol diethyl ether, diethylene glycol monobutyl ether, dipropylene glycol monomethyl ether, dipropylene glycol monoethyl ether, tripropylene glycol

monomethyl ether, 1-methoxy-2-propanol, 1-ethoxy-2-propanol, 1-methyl glycerol ether, 2-methyl glycerol ether, 1,3-dimethyl glycerol ether, 1-ethyl glycerol ether, 1,3-diethyl glycerol ether, triethyl glycerol ether, 1-pentyl glyceryl ether, 2-pentyl glyceryl ether, 1-octyl glyceryl ether and 2-ethylhexyl glyceryl ether.

13. The liquid detergent composition for textile products according to any one of claims 7 to 12, wherein the organic solvent having an optionally partially substituted aromatic group, an ether group and a hydroxy group which is the component (B4) is a compound selected from 2-phenoxyethanol, diethylene glycol monophenyl ether, triethylene glycol monophenyl ether, 2-benzyloxy ethanol and diethylene glycol monobenzyl ether.

14. The liquid detergent composition for textile products according to any one of claims 1 to 13, wherein the content of water is 10% by mass or more and 80% by mass or less.

15. A method for producing a liquid detergent composition for textile products, comprising mixing the following component (A), the following component (B), and water, wherein a percentage of the component (A) in all components to be mixed is 10% by mass or more and 60% by mass or less:

component (A): an internal olefin sulfonate having 17 or more and 24 or less carbon atoms, wherein a mass ratio of an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 2 or higher and position 4 or lower (IO-1S) to an internal olefin sulfonate having 17 or more and 24 or less carbon atoms with the sulfonate group at position 5 or higher (IO-2S), (IO-1S)/(IO-2S), is 0.75 or more and 5.5 or less; and

component (B): an organic solvent having a hydroxy group.

16. A method for producing a liquid detergent composition for textile products, including mixing the following component (A1), the following component (B) and water, wherein a percentage of the component (A1) in all components to be mixed is 10% by mass or more and 60% by mass or less:

component (A1): an internal olefin sulfonate obtained from an internal olefin having 17 or more and 24 or less carbon atoms, wherein a mass ratio of an olefin having 17 or more and 24 or less carbon atoms with a double bond at position 1 or higher and position 3 or lower (IO-1) to an olefin having 17 or more and 24 or less carbon atoms with a double bond at position 5 or higher (IO-2), (IO-1)/(IO-2) is 0.50 or more and 6.5 or less; and

component (B): an organic solvent having a hydroxy group.

17. A method for washing textile products, including washing the textile products with a detergent liquid containing the liquid detergent composition for textile products according to any one of claims 1 to 14, and water.

18. The method for washing textile products according to claim 17, wherein the content of the component (A) in the detergent liquid is 0.005% by mass or more and 1.0% by mass or less.

19. The method for washing textile products according to claim 17 or 18, wherein the content of the component (B) in the detergent liquid is 0.001% by mass or more and 0.8% by mass or less.