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(54) **LOW-FOAMING COMPOSITIONS COMPRISING N-METHYL-N-ACYLGLUCAMINES AND THE USE THEREOF FOR DEGREASING TEXTILE SUBSTRATES**

SCHAUMARME ZUSAMMENSETZUNGEN ENTHALTEND N-METHYL-N-ACYLGLUCAMINE SOWIE DEREN VERWENDUNG ZUM ENTFETTEN VON TEXTILSUBSTRATEN

COMPOSITIONS PEU MOUSSANTES CONTENANT DE N-MÉTHYL-N-ACYLGLUCAMINES AINSI QUE SON UTILISATION POUR LE DÉGRAISSAGE DE SUBSTRATS TEXTILES

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Description

[0001] The invention relates to low-foaming compositions comprising N-methyl-N-acylglucamines and specific copolymers and optionally a defoamer as well as the use thereof for degreasing substrates of all kinds, in particular textile substrates such as, for example, textile fibers.

[0002] When industrially manufacturing textile material, from the production of filaments up to the finishing of textile products [for example yarns, fabric webs (fabric panels or tubular knitted fabrics), semi-finished goods or finished products], additives are used for the manufacturing processes using high-speed production machines (spinning machines, thread machines, winding machines, spooling machines, re-spooling machines, weaving machines, knitting machines, dyeing machines, cutting machines, sewing machines, or knot machines, machines for the rolling or folding and packaging, etc.), in particular, for example, spinning additives, spinning oils, coning oils, sizings, smoothing agents, lubricants, glide agents, or other additives and compositions of this type, in order to reduce to a minimum abrasion or friction in or at the substrate and between the substrate and machine parts, or in order to adapt abrasion and friction to the respective process and to the used machine, in order to allow the manufacture to be carried out at the highest possible speed and with the highest possible output, and to avoid damages and/or defects at the manufactured goods to the highest possible extent.

[0003] Thus, use is made of, for example, spinning additives, spinning oils, coning oils, smoothing agents for chains, spindle oils, fats for ring travelers, sizings, spin finishes, plasticizers, dry and/or wet glide agents, etc., which contain suitable fatty substances (in particular waxes, fats and/or oils) or also wax-containing preparation agents, which improve the dry machine processability (for example the re-spooling of yarns or the high-speed sewability of webs).

[0004] Concerning a dyeing process or a brightening process, it is necessary to remove in advance the applied fatty substances from substrate, at least to such an extent that the applied fatty coating is no barrier or another significant obstacle for the homogeneous distribution and fixing of the dye or optical brightener on the substrate, and that the goods may be correctly dyed and optically brightened without negatively affecting the levelling properties and fastness properties of the used dyes.

[0005] It is also possible to use in color print waxes as additives which then are washed out from the goods. Furthermore, other preparation agents and additives (for example fabric softeners, anti-static agents, anti-foaming agents, resin preparations) can contain fatty substances of this type, or the substrates can be finished with certain waxes or fats or oils in order to achieve specific gloss effects or handle effects after the dyeing and/or optical brightening.

[0006] Sometimes it may happen that fatty products of this type emerge as an undesired soiling on substrates and, under certain circumstances, may result in defective dyeing. These fatty products and the additives thereof may be very different from one another, and the substrates may also be of different type and may require different specifications and conditions for the treating agents.

[0007] Depending on the processing, the manufacturing process, the substrate and/or desired effects, thus the removal of the applied fatty products of this type may be necessary in one or more steps before the goods leave the specific manufacturing facility for distribution. Thus, it is necessary, for example, to remove the fatty substances of this type, for example prior to the dyeing or optical brightening or prior to the finishing, i.e. during the pre-treatment of the textile substrate. Undesired soiling with fat - which sometimes can only be detected on the controlling table - should also be removed. An incorrect dyeing, on which the fatty products of this type have been applied, for example as preparation or an undesired soiling, must also be degreased before the dyeing is removed for correction.

Existing water-borne degreasing agents for the application on textile substrates, in particular on synthetic textiles and the blends thereof, are limited with respect to their applicability. Due to their chemical properties, such agents have a tendency for forming undesired foam under different application conditions. Both in continuous application and extract application, said foam formation may have a strong undesired influence on the degreasing effect and on the process, such as the cavitation of pumps, a reel stand-still in the nozzle dyeing machine, the overflow of foam out from the machines, the contamination of machines, a high amount of fluffs in the foam and the distribution of the fluffs, foam marks on the textile substrate, the introduction of foam into the next process step or insufficient degreasing results due to foam. Moreover, the usability of certain machines is limited or even excluded such as, for example, seeping washes, drum machines, machines in the extract application having high turbulences, dosage systems with pressure pumps or high-speed machines.

[0008] The use of agents which suppress foam ("defoamer") alone thereby does not represent a sufficient solution since therewith mostly undesired effects and disadvantages are connected. Exemplarily mentioned are here a lowering of the degreasing efficacy (since defoamers are often used in form of emulsions and may be negatively affected in the efficacy thereof by means of the emulsifying property of the degreasing agent), an increase in costs of the used process chemicals, stains due to an instability of the defoamer in presence of an emulsifier, an incompatibility with the defoamer or a limited selection of suitable machines for the process.

[0009] However, recent developments in the market require the possibility to allow performing the degreasing process on all possible types of textile machines based on a wet process, such as, for example, high-speed jet machines,

machines using a low portion of liquid, continuous machines using a spraying equipment, seeping washes or drum washing machines. Besides this, the degreasing agent and the process should be suitable for all known dosage systems, in particular also for high pressure dosage pumps.

[0010] US 6 989 360 B2 discloses degreasing agents for textiles fibers, a process for the manufacture thereof as well as the use thereof based on

- (a) an amine oxide,
- (b) at least one hexanediol,
- (c) at least one secondary, branched or cyclic hexanol,
- (d) at least one tenside,
- (e) water, and
- (f) optionally at least one formulation additive.

[0011] However, the degreasing agents described therein have a high tendency for foam formation and result in the above-mentioned negative effects in continuous applications and in the extract application, and thus are nor or only insufficiently suitable for many degreasing machines and degreasing processes.

[0012] US 5 318 728 A1 discloses low-foaming detergent compositions comprising N-alkyl polyhydroxy fatty acid amides having N-alkyl substituents in the range of C2-C8 and at least one auxiliary tenside for cleaning textile products. The described (anionic) auxiliary tensides, however, result in general in an increased foam tendency and limit the use of compositions containing such auxiliary tensides in the above-described degreasing machines and degreasing processes.

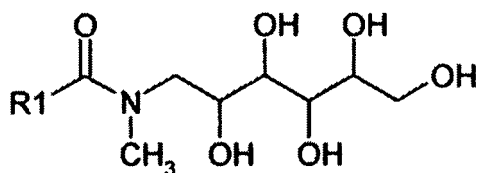
[0013] WO 2005/049674 A1 discloses copolymers for use as dispersing agents for pigmented soiling comprising mono-ethylenic unsaturated polyalkoxymonomer, non-quaternized nitrogen containing dipolar monomer, optionally non-ionic monoethylenic unsaturated monomers, and further optionally anionic monoethylenic unsaturated monomers.

[0014] WO 92/06153 A1 discloses detergent compositions comprising polyhydroxy fatty acid amide surfactants for grease, oil and clay soil removal. The detergent composition disclosed in WO 92/06153 may further comprise anionic or non-ionic surfactants, and polycarboxylate dispersing agents.

[0015] Thus, it was an object of the present invention to provide a tenside composition having improved efficacy for removing oils and/or fats from substrates, in particular from textile substrates, which has, if necessary, a lowered foam tendency and thus complies with the above-mentioned requirements in the degreasing machines and degreasing processes, and thus thereby avoids the described disadvantages and drawbacks.

[0016] This object is achieved according to a **first** aspect with a composition according to the invention comprising

- (a) at least one N-methyl-N-acylglucamine of Formula (I)



(I),

wherein R1 is selected from a

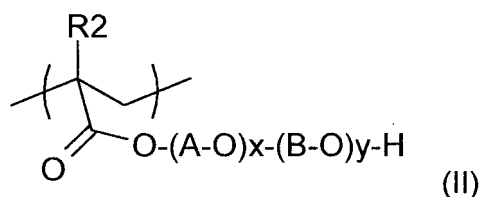
- branched or unbranched, and
- saturated or mono-unsaturated or poly-unsaturated C1-C21 alkyl residue;

and

- (b) at least one copolymer comprising at least two structural units selected from:

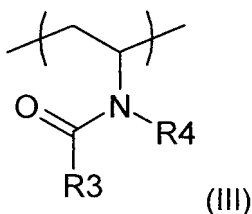
- (b1) 0 to 99 mole-% structural units of Formula (II),

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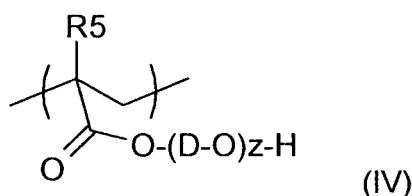
(b2) 0 to 99 mole-% structural units of Formula (III),

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(b3) 0 to 99 mole-% structural units of Formula (IV)

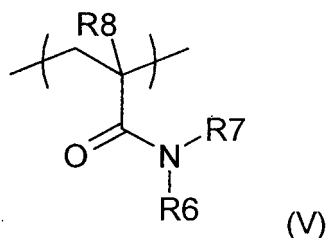
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and

(b4) 0 to 99 mole-% structural units of Formula (V),

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wherein

R2 is hydrogen or C1-C6 alkyl,

A is C2-C4 alkylene groups, and

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B is C2-C4 alkylene groups with the proviso that A is different from B, and

x, y are independently from one another an integer from 1 to 100,

R3, R4 are independently from one another hydrogen or C1-C6 alkyl, or, when including the nitrogen atom and the carbonyl group, form a ring having 5, 6, or 7 ring atoms,

R5 is hydrogen or C1-C6 alkyl,

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D is C2-C4 alkylene groups, and

z is an integer of from 1 to 50,

R6, R7 are independently from one another hydrogen or C1-C6 alkyl, or, when including the nitrogen atom and the carbonyl group, form a ring having 5, 6, or 7 ring atoms,

R8 is hydrogen or C1-C6 alkyl, and

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wherein the structural units (b1), (b2), (b3), and (b4) add up to 100 mole-%.

[0017] The composition according the invention may furthermore comprise at least one organic solvent and/or at least

one defoamer and/or at least one additive and/or water.

[0018] Furthermore, in the composition according to the invention, R1 of component (a) may be selected from branched or unbranched and saturated or mono-unsaturated or poly-unsaturated C1-C3 alkyl, C5 alkyl, C7 alkyl, C9 alkyl, C11 alkyl, C13 alkyl, C15 alkyl, C17 alkyl, C19 alkyl and/or C21 alkyl.

[0019] Furthermore, in the composition according to the invention, R1 of component (a) may be selected from branched or unbranched and saturated or mono-unsaturated or poly-unsaturated C11 alkyl, C13 alkyl, C15 alkyl, C17 alkyl, C19 alkyl and/or C21 alkyl.

[0020] Furthermore, the molecular weight of the at least one copolymer in the composition according to the invention may be between 1,000 to 1,000,000 g/mole, preferably between 1,000 and 40,000 g/mole, furthermore preferably between 1,000 and 25,000 g/mole.

[0021] Furthermore, the at least one copolymer of the composition according to the invention may comprise at least one structural unit selected from the Formulas (II) and (IV) and at least one further structural unit selected from the Formulas (III) and (V).

[0022] Furthermore, in the composition according to the invention, the molar ratio of the at least one structural unit selected from the Formulas (II) and (IV) to the at least one further structural unit selected from the Formulas (III) and (V) may be in the range of from 1:10 to 10:1, or in the range of from 1:5 to 5:1, or in the range of from 1:2 to 2:1, or may be 1:1.

[0023] Furthermore, in the composition according to the invention, the at least one additive may be selected from: tensides, rheology modifiers, biocides, pH regulators, complexing agents, or emulsifiers.

[0024] Furthermore, in the composition according to the invention, the at least one solvent may be selected from at least one alcohol, preferably from ethylene glycol, 1,2-propylene glycol, 1,3-propylene glycol, 1,2-butanediol, 1,4-butanediol, 1,2-pentanediol, 1,5-pentanediol, 1,2-hexanediol, 1,6-hexanediol, 1,2-heptanediol, 1,7-heptanediol, 1,2-octanediol, 1,8-octanediol, 1,2-nonanediol, 1,9-nonanediol, 1,2-decanediol, 1,10-decanediol, 1,2-undecanediol, 1,11-undecanediol, 1,2-dodecanediol, 1,12-dodecanediol, diethylene glycol, triethylene glycol, dipropylene glycol, tripropylene glycol, glycerol, diglycerol, triglycerol, sorbitol, xylitol, mannitol, or mixtures thereof.

[0025] Furthermore, the composition according to the invention may comprise up to 99.9 wt.-% N-methyl-N-acylglucamine, up to 80 wt.-% copolymer, and optionally up to 80 wt.-% of at least one organic solvent, optionally up to 10 wt.-% of at least one defoamer, optionally up to 50 wt.-% of at least one additive, and optionally up to 99.9 wt.-% water, wherein the proportional weights of the individual components in the composition always add up to 100 wt.-%.

[0026] N-methyl-N-acylglucamines of Formula (I) (in the following also termed as "component (a)") are, for example, described in EP 0 550 637 B1. The N-methyl-N-acylglucamines may be produced by reacting the respective fatty acid ester, respectively fatty acid ester mixtures, with N-methylglucamine in presence of a solvent containing hydroxyl groups or alkoxy groups. Suitable solvents are, for example, C1-C4-monoalcohols, ethylene glycol, 1,2-propylene glycol, glycerol and alkoxyalcohols. 1,2-propylene glycol is preferred. N-methylglucamine, as also described in EP 0 550 637 B1, may be obtained by reductive amination of glucose with methylamine.

[0027] Suitable fatty acid esters, which are reacted with said N-methylglucamines to N-methyl-N-acylglucamines are, in general, the methyl esters, which may be obtained by transesterification from natural fats and oils, for example from the triglycerides. Suitable raw materials for the manufacture of the fatty acid methyl ester are, for example, coconut oil, palm oil, sunflower oil, or linseed oil. Since said natural oils are mostly mixtures of different fatty acids, this means for the applied fatty acid esters, respectively fatty acid ester mixtures, derived therefrom, as a rule, that likewise these are not homogeneous materials (i.e. consist of fatty acids, which have a length of alkyl chains of, for example, C15 only, and/or of saturated or unsaturated fatty acids only), however rather are derivable from mixtures of different short-chain and/or long-chain fatty acids. Consequently, the compositions according to the invention typically contain as component (a) mixtures of several different N-methyl-N-acylglucamines of Formula (I), wherein R1, respectively independently from one another, is an unbranched or branched, saturated, mono-unsaturated or poly-unsaturated alkyl residue. In particular, R1 is selected from C1-C3 alkyl, C5 alkyl, C7 alkyl, C9 alkyl, C11 alkyl, C13 alkyl, C15 alkyl, C17 alkyl, C19 alkyl and/or C21 alkyl.

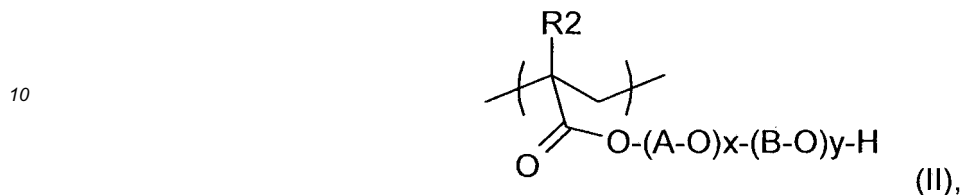
[0028] In particularly preferred are thereby N-methyl-N-acylglucamines of Formula (I), in which R1 represents a long-chain, unbranched, saturated, mono-unsaturated or poly-unsaturated alkyl residue, in particular C11 alkyl, C13 alkyl, C15 alkyl, C17 alkyl, C19 alkyl and/or C21 alkyl. The longer the alkyl chain of the fatty acids in the N-methyl-N-acylglucamine, the lower is the foam tendency. However, *vice versa*, applies that the shorter the alkyl chain of the fatty acids in the N-methyl-N-acylglucamine, the better is the degreasing effect.

[0029] Copolymers (in the following also termed as "component (b)") comprising structural units of Formulas (II), (III), (IV) and (V) are, for example, described in WO 2010/149253 A1 and WO 2011/150997 A1. The manufacture of the copolymers occurs by means of radical polymerization of the monomers from which the structural units are derived from, by using a suitable radical initiator at temperatures between 50 and 150 °C. The molecular weight of this copolymer may be in the range of from 1,000 to 1,000,000 g/mol, or in the range of from 1,000 to 500,000 g/mol, or in the range of from 1,000 to 250,000 g/mol, or in the range of from 1,000 to 100,000 g/mol, or in the range of from 1,000 to 40,000 g/mol, or in the range of from 1,000 to 30,000 g/mol, or in the range of from 1,000 to 25,000 g/mol, or may be 23,000 g/mol or

21,000 g/mol.

[0030] The at least one copolymer which may be contained in the composition according to the invention may, in particular, comprise:

5 (b1) at least one structural unit of Formula (II),



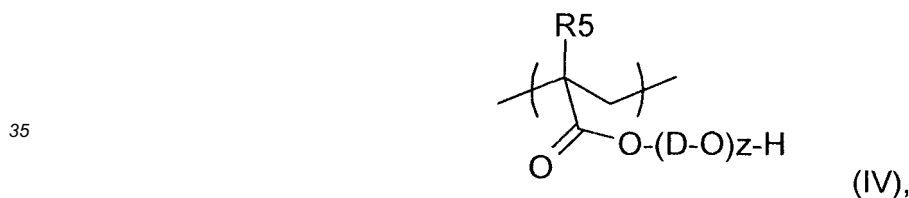
15 and/or

(b2) at least one structural unit of Formula (III),



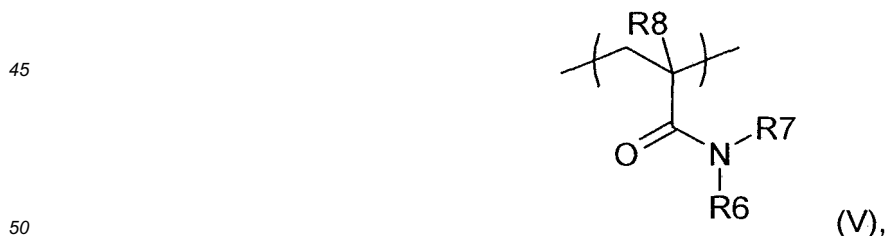
25 and/or

(b3) at least one structural unit of Formula (IV)



35 and/or

(b4) at least one structural unit of Formula (V)



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wherein R2 may be hydrogen or C1-C6 alkyl; wherein A may be C2-C4 alkylene groups, wherein B may be C2-C4 alkylene groups; wherein A and B are different from one another; wherein x, y may independently from one another be an integer from 1 to 100, or from 1 to 90, or from 1 to 80, or from 1 to 70, or from 1 to 60, or from 1 to 50, or from 1 to 40, or from 1 to 30, or from 1 to 20; wherein R3, R4 may be independently from one another hydrogen or C1-C6 alkyl or may form a ring of 5, 6, or 7 ring atoms when including the nitrogen atom and the carbonyl group; wherein R5 may be hydrogen or C1-C6 alkyl; wherein D may be C2-C4 alkylene groups; wherein z may be an integer from 1 to 50, or from 1 to 40, or from 1 to 30, or from 1 to 20; wherein R6, R7 may independently from one another be

hydrogen or C1-C6 alkyl and may form a ring having 5, 6, or 7 ring atoms when including the nitrogen atom and the carbonyl group; wherein R8 may be hydrogen or C1-C6 alkyl.

[0031] In particular, the structural units of Formulas (II) and/or (IV) may be contained in the copolymer. In particular, at least one structural unit of Formulas (II) or (IV) is contained in the copolymer. The structural units of Formulas (II) and (IV) have a water-borne effect. Furthermore, the copolymer may at least comprise at least one further structural unit of Formulas (III) and/or (V). In particular, at least one structural unit of Formulas (III) or (V) is contained in the copolymer. These structural units of Formulas (III) and (V) have an emulsifying effect.

[0032] The at least one copolymer may at least comprise one structural unit selected from the Formulas (II) and (IV) and at least one further structural unit selected from the Formulas (III) and (V). The molar ratio of the at least one structural unit selected from Formulas (II) and (IV) to the at least one further structural unit selected from Formulas (III) and (V) may be in the range of from 1:10 to 10:1, or in the range of from 1:5 to 5:1, or in the range of from 1:2 to 2:1, or can be 1:1.

[0033] The term "copolymer" signifies a polymer in the polymerization thereof at least two types of monomers or oligomers (monomers and oligomers are also termed in the meaning of the invention as "structural unit") are used, wherein the at least two monomers or at least two oligomers are different from one another. For example, the monomers or oligomers have different molecular formulas. Furthermore, in the meaning of the invention, the term "copolymer" encompasses each type of copolymer such as block copolymer or a copolymer in which the monomer or oligomer units are randomly arranged.

[0034] It has been discovered that the copolymer strengthens the degreasing effect of the at least one N-methyl-N-acylglucamine and furthermore has an emulsifying effect. The degreasing effect and/or the lowered foam tendency of the composition according to the invention comprising at least one N-methyl-N-acylglucamine of Formula (I) and at least one copolymer is improved in comparison to the degreasing effect and/or the lowered foam tendency of the individual components (a) and (b) of the composition according to the invention.

[0035] The molar ratio of component (a) to component (b) in the composition according to the invention may be varied within wide ranges such that practically no restriction of the mixture ratio exists. The weight ratio thus may be in the range of from 1:10 to 10:1, or in the range of from 1:5 to 5:1, or in the range of from 1:2 to 2:1, or can be 1:1.

[0036] In addition, the composition according to the invention may contain one or several organic solvents (in the following also termed as "component (c)"), in particular one or several alcohols. Thereby, alcohols are monovalent or polyvalent alcohols. Particularly preferred are thereby polyvalent alcohols such as ethylene glycol, 1,3-propylene glycol, 1,2-butanediol, 1,4-butanediol, 1,2-pentanediol, 1,5-pentanediol, 1,2-hexanediol, 1,6-hexanediol, 1,2-heptanediol, 1,7-heptanediol, 1,2-octanediol, 1,8-octanediol, 1,2-nonanediol, 1,9-nonanediol, 1,2-decanediol, 1,10-decanediol, 1,2-undecanediol, 1,11-undecanediol, 1,2-dodecanediol, 1,12-dodecanediol, diethylene glycol, triethylene glycol, dipropylene glycol, tripropylene glycol, glycerol, diglycerol, triglycerol, sorbitol, xylitol, mannitol, and/or mixtures thereof.

[0037] Furthermore, the composition according to the invention may contain one or several defoamers (in the following also termed as "component (d)"). Thereby, such defoamers are used which preferably do not have one of the described undesired effects or drawbacks for the degreasing processes and degreasing machines described above. The presence of a defoamer may further improve the degreasing effect and/or the lowered foam tendency of the compositions according to the invention. Defoamers which may be used in the composition according to the invention may be selected from silicon-containing defoamers such as defoamers based on siloxane; fatty acid-containing defoamers such as defoamers based on fatty acid derivatives, which are e.g. known under the trademark *Antimussol* from company Clariant; or alcohol-containing defoamers such as defoamers based on an alcohol derivative; or mixtures of one or several defoamers.

[0038] Furthermore, in the composition according to the invention, at least one additive may be utilized (in the following also termed as "component (e)"), such as, for example, tensides; rheology modifiers; biocides such as benzisothiazolinone (for example known under the trademarks Nipacid BIT 20, CAS-No. 2634-33-5); pH regulators; complexing agents; or emulsifiers such as DPG (1,2-propylene glycol).

[0039] The weight proportion of the at least one additive in the composition according to the invention may be up to 20 %, or up to 15 %, or up to 10 %, or up to 5 %, or up to 1 %, based on the total weight of the composition according to the invention.

[0040] Furthermore, the composition according to the invention may also contain water.

[0041] The composition according to the invention may comprise: up to 99.9 wt.-%, or up to 99 wt.-%, or up to 95 wt.-%, or up to 90 wt.-%, or up to 80 wt.-%, or up to 70 wt.-%, or up to 60 wt.-%, or up to 50 wt.-%, or up to 40 wt.-%, or up to 30 wt.-%, or up to 20 wt.-%, or up to 10 wt.-%, or up to 5 wt.-%, or up to 2 wt.-%, or up to 1 wt.-%, or up to 0.5 wt.-%, or up to 0.1 wt.-% of component (a);

up to 80 wt.-%, or up to 70 wt.-%, or up to 60 wt.-%, or up to 50 wt.-%, or up to 40 wt.-%, or up to 30 wt.-%, or up to 20 wt.-%, or up to 10 wt.-%, or up to 5 wt.-%, or up to 2 wt.-%, or up to 1 wt.-%, or up to 0.5 wt.-%, or up to 0.1 wt.-% of component (b);

0 up to 80 wt.-%, or up to 70 wt.-%, or up to 60 wt.-%, or up to 50 wt.-%, or up to 40 wt.-%, or up to 30 wt.-%, or up to 20 wt.-%, or up to 10 wt.-%, or up to 5 wt.-%, or up to 2 wt.-%, or up to 1 wt.-%, or up to 0.5 wt.-%, or up to 0.1 wt.-% of

component (c);

0 up to 10 wt.-%, or up to 7 wt.-%, or up to 5 wt.-%, or up to 2 wt.-%, or up to 1 wt.-%, or up to 0.5 wt.-%, or up to 0.1 wt.-% of component (d);

5 0 up to 50 wt.-%, or up to 40 wt.-%, or up to 30 wt.-%, or up to 20 wt.-%, or up to 10 wt.-%, or up to 5 wt.-%, or up to 2 wt.-%, or up to 1 wt.-%, or up to 0.5 wt.-%, or up to 0.1 wt.-% of component (e);

0 up to 99.9 wt.-%, or up to 99 wt.-%, or up to 95 wt.-%, or up to 90 wt.-%, or up to 80 wt.-%, or up to 70 wt.-%, or up to 60 wt.-%, or up to 50 wt.-%, or up to 40 wt.-%, or up to 30 wt.-%, or up to 20 wt.-%, or up to 10 wt.-%, or up to 5 wt.-%, or up to 2 wt.-%, or up to 1 wt.-%, or up to 0.5 wt.-%, or up to 0.1 wt.-% water;

wherein the weight percentages of the individual components (a) to (e) and water always add up to 100 wt.-%.

10 **[0042]** In particular, the composition according to the invention may comprise or may substantially consist of:

0.1 to 50 wt.-% of component (a);

15 0.1 to 50 wt.-% of component (b);

0.1 to 50 wt.-% of component (c);

0 to 5 wt.-% of component (d);

20 0 to 20 wt.-% of component (e);

99.9 to 0.1 wt.-% of water.

[0043] In particular, the composition according to the invention may comprise or may substantially consist of:

25 10 to 20 wt.-% of component (a);

5 to 15 wt.-% of component (b);

30 15 to 30 wt.-% of component (c) and component (e);

0.1 to 5 wt.-% of component (d);

35 65 to 5 wt.-% of water.

[0044] In particular, the composition according to the invention may comprise or may substantially consist of:

40 10 to 20 wt.-% of component (a), wherein R1 is selected from saturated or mono-unsaturated or poly-unsaturated C16-C20 alkyl residue;

5 to 15 wt.-% of component (b), wherein component (b) is a copolymer consisting of the structural units (II) and (III);

15 to 30 wt.-% of component (c) and component (e);

45 0.1 to 5 wt.-% of component (d);

65 to 5 wt.-% of water.

[0045] The composition according to the invention may also be fastly and easily washed out, for example at typical temperatures in the range of from 50 °C to 95 °C.

[0046] The composition according to the invention is characterized by an improved efficacy for removing oils and/or fats from substrates of all kinds, in particular from textile substrates and/or has a lowered foam tendency.

[0047] The term "lowered foam tendency" in the meaning of the present invention is a relative comparison between the tendency of the reference composition such as Humectol LYS which is known from the prior art, to form foam, and the composition according to the invention (for example during a washing process). In order to determine whether a lowered foam tendency of the composition according to the invention is present, a test method is used (for example using a device for measuring foam such as SITA R 2000), in which a defined amount (for example 1 g) of the composition according to the invention and the composition known from the prior art, respectively, is stirred in a defined amount of

desalted water (for example 500 mL) at a defined stirring speed (for example 1,000 rpm). The resulting foam volume is measured in a determined time period (for example 20 sec) over a defined time period (for example 30 min) and is documented. The used value unit for determining the foam volume is mL. The measured values of the composition according to the invention are compared with the measured values of the reference composition. The lower the values (i.e., the lower the amount of produced foam measured in terms of mL), the lower is the foam tendency.

[0048] A second aspect of the present invention relates to the use of the compositions according to the invention for cleaning substrates, in particular for cleaning textile substrates, in particular for removing oils and/or fats.

[0049] Thus, the second aspect, in particular, relates to the use of the composition according to the invention in the field of textiles for removing oils and/or fats from textile substrates.

[0050] The term "removing oils and/or fats" (also termed as "degreasing effect") in the meaning of the present invention is the capability of the composition according to the invention to reduce the oil and/or fat content on or in a substrate, in particular a textile substrate. Thereby, the oil/oils and/or fat/fats which are present on or in the substrate may thereby at least be partially or substantially completely removed.

[0051] The composition according to the invention, in particular, may be used in the pre-treatment of textile substrates. A pretreatment is the preparation of a textile substrate for the subsequent dyeing, printing, or optical brightening process, in which soilings such as oils, fats, solids, etc. disturb the process. The textile substrate can thereby furthermore comprise non-wovens, carpets or technical textiles, in the dyeing thereof the composition according to the invention supports the dyeing of the fibers as completely as possible.

[0052] The composition according to the invention may in particular be used for removing fats and/or oils in a dyeing process. In the pre-cleaning, in which fats and/or oils are removed, the composition according to the invention may be combined with the dyeing bath in one step.

[0053] The composition according to the invention may be used for removing oils and/or fats in the industrial washing field. Industrial washing processes have to be distinguished from the household washing processes to that effect that typically working cloths or textile working products are washed which are typically significantly more soiled, such as cleaning rags, which due to the pollutions contained therein cannot be cleaned with a household washing process, respectively are not allowed to be washed with normal household linen due to environmental reasons (for example the pollutions contain heavy metals or the textiles are strongly polluted with oil). The washing conditions for industrial washes are clearly more intensive (for example higher washing temperatures, higher amounts of detergents).

[0054] Furthermore, the N-methyl-N-acylglucamine of Formula (I) alone may find application in the textile field, in particular for cleaning textile substrates, in particular for removing oils and/or fats from substrates, in particular textile substrates.

[0055] Furthermore, the composition according to the invention may be used for the manufacture of a low-foaming cleaning solution for substrates of all kinds, in particular textile substrates, in particular for removing oils and/or fats.

[0056] A low-foaming cleaning solution is obtainable by diluting a composition according to the invention with water to a final concentration of 1%, or 2%, or 5%, or 10%, in particular to a final concentration of 1% to 6%. The water used for dilution may be fully desalted water or water which is taken from a tap (such as drinking water).

[0057] Consequently, a low-foaming cleaning solvent comprising at least one composition according to the invention is also inventive.

[0058] The textile substrates comprise cellulose fibers and/or non-cellulose fibers. The non-cellulose fibers may be of natural origin (for example wool or silk) or of synthetic origin. Synthetic non-cellulose fibers may be selected from polyamides, polyesters, polyurethanes, or mixtures thereof. Cellulose fibers are, in particular, fibers which substantially comprise cellulose-based material obtainable from cotton, linen, jute, regenerated cellulose or hemp, or which consist thereof. Textile substrates may at least comprise 70%, or at least 80%, or at least 90% cellulose fibers. The textile substrates may also consist of mixtures of non-cellulose fibers, in particular of mixtures from polyamide and polyurethane or from polyester and polyurethane. The respective amount of polyurethane may be up to 5%, or up to 10%, or up to 20%, or up to 30%, or up to 40%, or up to 50%.

[0059] The textile substrates may be present in woven or non-woven form.

[0060] The oils and/or fats to be removed are, in particular, such oils and/or fats, which are applied in the manufacture of the textile substrate, such as fatty substances (in particular waxes, fats and/or oils) or also wax-containing preparation agents, which improve the dry machine processability (for example the re-spooling of yarns or the high-speed sewability of webs). As examples for such oils and/or fats to be removed are mentioned: spinning additives, spinning oils, coning oils, chain smoothing agents, spindle oils, fats for ring travelers, sizings, spinning preparations, plasticizers, dry and wet glide agents, mineral oils or silicon oils, etc.

[0061] The use of the composition according to the invention is, in particular, advantageous since the substrates, in particular the textile substrates, may be cleaned at least partially, preferably completely, from the fats and/or oils to be removed. Furthermore, the use of the composition according to the invention has the advantage that the whiteness of the textile substrate is negatively influenced to a lesser extent.

[0062] A third aspect of the present invention relates to the manufacture of the compositions according to the invention

comprising the following steps: if necessary, transferring a component of a solid physical state into the liquid physical state; mixing the components of the composition according to the invention.

[0063] The step of mixing the components of the composition according to the invention may be performed in a mixing device which is suitable for said mixing. Thereby, it may be required that one or several of the components, provided they are in a solid condition in the mixing process at the applied temperature, have to be liquefied prior to the mixing. In particular, the N-methyl-N-acylglucamines are mostly solid at room temperature and, if necessary, have to be molten prior to the mixing.

Examples

[0064] The invention is described by the following examples, however, is not limited thereto.

Examples 1 to 4 and Comparison Example 1

[0065] The compositions described in the following were made by mixing the individual components. The parts mentioned in the examples are parts per weight unless not explicitly defined differently.

Comparison Example 1:

Humectol LYS (Trade product of the company Archroma Management GmbH)

Example 1:

[0066]

| | |
|-------------|---|
| 20.0 parts | N-methyl-N-acylglucamine based on sunflower oil (main component according to Formula (I), wherein R1 = C17 alkyl unsaturated) |
| 10.0 parts | copolymer containing the structural units of Formulas (II), (III) and (IV) in the molar ratio 2:3:1 |
| 9.1 parts | 1,2-propylene glycol |
| 1.2 parts | glycerol |
| 59.7 parts | Wasser |
| <hr/> | |
| 100.0 parts | |

Example 2:

[0067]

| | |
|-------------|--|
| 20.0 parts | N-methyl-N-acylglucamine based on rapeseed oil (main component according to Formula (I), wherein R1 = C17 alkyl unsaturated) |
| 10.0 parts | copolymer containing the structural units of Formulas (II), (III) and (IV) in the molar ratio 2:3:1 |
| 15.0 parts | ethylene glycol |
| 5.4 parts | 1,2-propylene glycol |
| 1.5 parts | glycerol |
| 48.1 parts | water |
| <hr/> | |
| 100.0 parts | |

Example 3:

[0068]

| | |
|------------|--|
| 20.0 parts | N-methyl-N-acylglucamine based on rapeseed oil (main component according to Formula (I), wherein R1 = C17 alkyl unsaturated) |
| 10.0 parts | copolymer comprising structural units of Formulas (II) and (III) in the molar ratio 1:1 |
| 15.3 parts | ethylene glycol |

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(continued)

| | | |
|---|-------------|----------------------------|
| | 5.4 parts | 1,2-propylene glycol |
| | 1.5 parts | glycerol |
| 5 | 3.0 parts | defoamer (Antimussol 5084) |
| | 44.8 parts | water |
| | 100.0 parts | |

10 Example 4:

[0069]

| | | |
|----|-------------|---|
| | 20.0 parts | N-methyl-N-acylglucamine based on coconut oil (main component according to Formula (I), wherein R1 = C15 alkyl saturated and C17 alkyl saturated) |
| 15 | 10.0 parts | copolymer comprising structural units of Formulas (II) and (III) in the molar ratio 1:1 |
| | 15.3 parts | ethylene glycol |
| | 54.7 parts | water |
| | 100.0 parts | |

20
[0070] The compositions according to the invention of Examples 1 to 4 as well as the composition of the Comparison Example 1 were investigated and evaluated in view of their degreasing effect and the foam tendency.

25 Degreasing effect

[0071] The test for analyzing the degreasing effect assesses the efficiency of the degreasing agent to remove mineral oil, respectively silicon oil, from polyamide/elastane (PA/EL) blends. Defined amounts of mineral oil, respectively silicon oil, are removed from the mixed fiber webs by means of a washing process. The more oil is removed, the better is the efficiency of the degreasing agent.

30
[0072] Samples of 5 g of PA/EL blends (80/20), respectively, were stored in an air-conditioned room for a period of four hours and were subsequently weighed → W1. Subsequently, the samples were dipped for a period of 15 min into a 10% solution of the respective oil in perchloroethylene, were taken out, were wrung out and were then dried on a Mathis Air Dryer for a period of 2 min at 120 °C. Then, once again, the samples were stored in an air-conditioned room for a period of four hours and were subsequently weighed → W2. The amount of the oil absorbed on the samples (W2 - W1) hereby is approximately 10%. Subsequently, the samples were dipped into a Mathis Labomat in an aqueous bath containing 4 g/L of degreasing agent and 1 g/L of soda (sodium carbonate), and were washed for a period of 30 min at 80 °C (heating rate 1 °C/min). The bath was drained and the samples were rinsed for a period of 10 min at 70 °C, 50 °C and 3 °C, respectively, were dried at room temperature and were in turn stored in an air-conditioned room for a period of four hours, and were subsequently weighed → W3. The amount of remaining oil on the samples in % after the washing is given by means of formula $(W3 - W1) / (W2 - W1) * 100$. The lower the value in %, the better is the degreasing effect. The results for Comparison Example 1 as well as for Examples 1 to 4 are represented in Table 1.

Table 1: Degreasing effect

| | Residual amount of silicon oil | Residual amount of mineral oil |
|-------------------------|--------------------------------|--------------------------------|
| 45 Comparison Example 1 | 20.2% | 32.9% |
| Example 1 | 14.4% | 28.1% |
| 50 Example 2 | 3.2% | 4.5% |
| Example 3 | 3.6% | 8.2% |
| Example 4 | 7.0% | 12.0% |

55 **[0073]** The compositions according to the invention of Examples 1 to 4 exhibit a significantly improved degreasing effect compared to Comparison Example 1.

Foaming behavior

[0074] For analyzing foaming behavior, 1 g of degreasing agent dissolved in 500 mL of desalted water in a sample glass of a SITA R 2000 foam tester are tested with respect to the resulting foam build-up at a stirrer speed of 1,000 rpm. For this, the foam volume was measured in time intervals of 20 sec, respectively, over a time period of 30 min in total. The initial value after 20 sec and the final value after 30 min were documented and are represented for Comparison Example 1 and for Examples 1 to 4 in Table 2. The lower the value in mL, the better is the foam behavior.

Table 2: Foam behavior

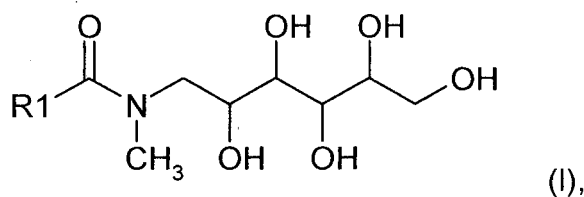
| | Initial value 20 sec | Final value 30 min |
|----------------------|----------------------|--------------------|
| Comparison Example 1 | 112 mL | 254 mL |
| Example 1 | 23 mL | 86 mL |
| Example 2 | 69 mL | 205 mL |
| Example 3 | 53 mL | 193 mL |
| Example 4 | 32 mL | 87 mL |

[0075] The compositions according to the invention of Examples 1 to 4 exhibit a significantly lower foam formation compared to Comparison Example 1.

Claims

1. Composition comprising

(a) at least one N-methyl-N-acylglucamine of Formula (I)



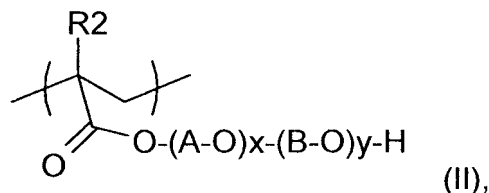
wherein R1 is selected from an

- unbranched or branched, and
- saturated or mono-unsaturated or poly-unsaturated C1-C21 alkyl residue;

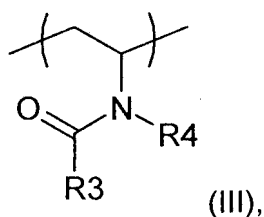
and

(b) at least one copolymer comprising at least two structural units selected from:

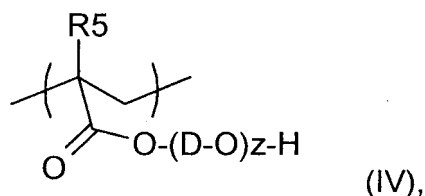
(b1) 0 to 99 mole-% structural units of Formula (II),



(b2) 0 to 99 mole-% structural units of Formula (III),

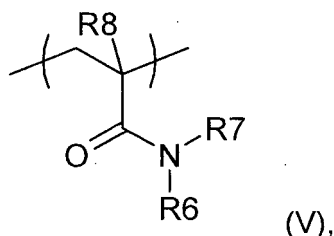


10 (b3) 0 to 99 mole-% structural units of Formula (IV)



20 and

(b4) 0 to 99 mole-% structural units of Formula (V),



30 wherein

R2 is hydrogen or C1-C6 alkyl,

A is C2-C4 alkylene groups, and

35 B is C2-C4 alkylene groups with the proviso that A is different from B, and

x, y are independently from one another an integer from 1 to 100,

R3, R4 are independently from one another hydrogen or C1-C6-alkyl, or, when including the nitrogen atom and the carbonyl group, form a ring having 5, 6, or 7 ring atoms,

R5 is hydrogen or C1-C6 alkyl,

40 D is C2-C4 alkylene groups, and

Z is an integer from 1 to 50,

R6, R7 are independently from one another hydrogen or C1-C6 alkyl, or, when including the nitrogen atom and the carbonyl group, form a ring having 5, 6, or 7 ring atoms,

R8 is hydrogen or C1-C6 alkyl, and

45 wherein the structural units (b1), (b2), (b3), and (b4) add up to 100 mole-%.

2. Composition according to claim 1, further comprising at least one organic solvent and/or at least one defoamer and/or at least one additive and/or water.

3. Composition according to at least one of claims 1 or 2, wherein R1 of component (a) is selected from

- branched or unbranched, and

55 - saturated or mono-unsaturated or poly-unsaturated C1-C3 alkyl, C5 alkyl, C7 alkyl, C9 alkyl, C11 alkyl, C13 alkyl, C15 alkyl, C17 alkyl, C19 alkyl, and/or C21 alkyl.

4. Composition according to at least one of the preceding claims, wherein R1 of component (a) is selected from a branched or unbranched and saturated or mono-unsaturated or poly-unsaturated C11 alkyl, C13 alkyl, C15 alkyl,

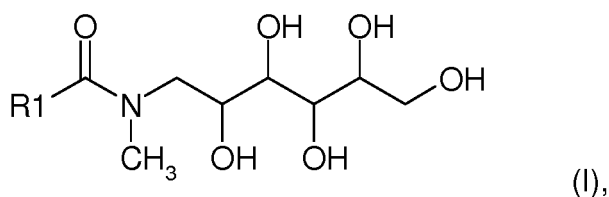
C17 alkyl, C19 alkyl, and/or C21 alkyl

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5. Composition according to at least one of the preceding claims, wherein the molecular weight of the at least one copolymer is between 1,000 up to 1,000,000 g/mole, preferably between 1,000 and 40,000 g/mole, preferably between 1,000 and 25,000 g/mole.
 6. Composition according to at least one of the preceding claims, wherein the at least one copolymer comprises at least one structural unit selected from the Formulas (II) and (IV) and at least a further structural unit selected from the Formulas (III) and (V).
 7. Composition according to claim 6, wherein the molar ratio of the at least one structural unit selected from the Formulas (II) and (IV) to the at least one further structural unit selected from the Formulas (III) and (V) may be in the range of from 1:10 to 10:1, or in the range of from 1:5 to 5:1, or in the range of from 1:2 to 2:1, or can be 1:1.
 8. Composition according to at least one of the preceding claims, wherein the at least one additive is selected from: tensides, rheology modifiers, biocides, pH regulators, complexing agents, or emulsifiers.
 9. Composition according to at least one of the preceding claims, wherein the at least one solvent is selected from at least one alcohol, preferably from ethylene glycol, 1,2-propylene glycol, 1,3-propylene glycol, 1,2-butanediol, 1,4-butanediol, 1,2-pentanediol, 1,5-pentanediol, 1,2-hexanediol, 1,6-hexanediol, 1,2-heptanediol, 1,7-heptanediol, 1,2-octanediol, 1,8-octanediol, 1,2-nonanediol, 1,9-nonanediol, 1,2-decanediol, 1,10-decanediol, 1,2-undecanediol, 1,11-undecanediol, 1,2-dodecanediol, 1,12-dodecanediol, diethylene glycol, triethylene glycol, dipropylene glycol, tripropylene glycol, glycerol, diglycerol, triglycerol, sorbitol, xylitol, mannitol, or mixtures thereof.
 10. Composition according to at least one of the preceding claims comprising up to 99.9 wt.-% N-methyl-N-acylglucamine, up to 80 wt.-% copolymer, and optionally up to 80 wt.-% of at least one organic solvent, optionally up to 10 wt.-% of at least one defoamer, optionally up to 50 wt.-% of at least one additive, and optionally up to 99.9 wt.-% water, wherein the weight percentages of the individual components of the composition always add up to 100 wt.-%.
 11. Use of the composition according to one of the preceding claims 1 to 10 for cleaning substrates, in particular textile substrates, in particular for removing oils and/or fats.
 12. Use of the composition according to one of the preceding claims 1 to 10 for the manufacture of a low-foaming cleaning solution for substrates of all kinds, in particular textile substrates, in particular for removing oils and/or fats.
 13. Use according to claim 11 or 12 during the pre-treatment of textile substrates.
 14. Method of manufacturing the composition according to at least one of claims 1 to 10, comprising the following steps:
 - if necessary, transferring a component from the solid physical state into the liquid physical state,
 - mixing the components for the composition according to at least one of claims 1 to 10.

45 **Patentansprüche**

1. Zusammensetzung aufweisend

(a) wenigstens ein N-Methyl-N-acylglucamin der Formel (I)



wobei R1 ausgewählt ist von einem

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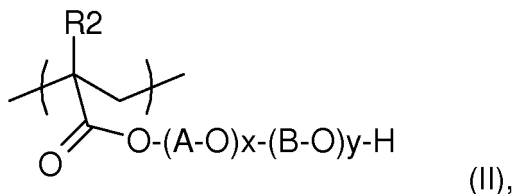
- unverzweigtem oder verzweigtem, und
- gesättigtem oder einfach ungesättigtem oder mehrfach ungesättigtem C1-C21 Alkylrest; und

(b) wenigstens einem Copolymer aufweisend wenigstens zwei Struktureinheiten ausgewählt von

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(b1) 0 bis 99 mol% Struktureinheiten der Formel (II),

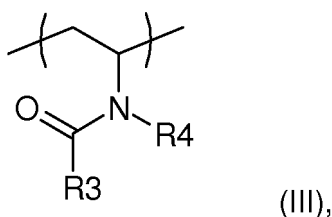
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(b2) 0 bis 99 mol% Struktureinheiten der Formel (III),

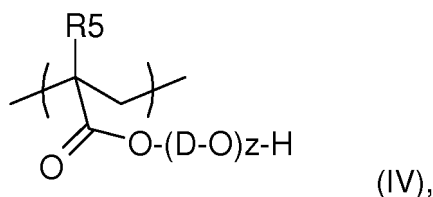
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(b3) 0 to 99 mol% Struktureinheiten der Formel (IV)

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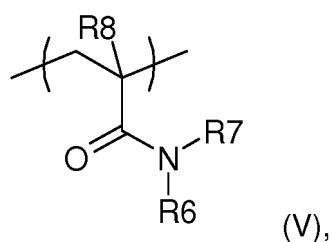


35

und

(b4) 0 to 99 mol% Struktureinheiten der Formel (V),

40



45

wobei

50

R2 Wasserstoff oder C1-C6 Alkyl ist,

A C2-C4 Alkylengruppe ist, und

B C2-C4 Alkylengruppe ist, mit der Vorgabe, dass A verschieden von B ist, und

x, y unabhängig voneinander eine ganzzahlige Zahl von 1 bis 100 sind,

55

R3, R4 unabhängig voneinander Wasserstoff, oder C1-C6 Alkyl sind, oder, wenn das Stickstoffatom und die Carbonylgruppe beinhaltet wird, einen Ring bilden, aufweisend 5, 6, oder 7 Ringatome,

R5 Wasserstoff oder C1-C6 Alkyl ist,

D C2-C4 Alkylengruppe ist, und

Z eine ganzzahlige Zahl von 1 bis 50 ist,

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R6, R7 unabhängig voneinander Wasserstoff oder C1-C6 Alkyl sind, oder, wenn das Stickstoffatom und die Carbonylgruppe beinhaltet wird, einen Ring bilden, aufweisend 5, 6, oder 7 Ringatome, R8 Wasserstoff oder C1-C6 Alkyl ist, und

- 5 wobei die Struktureinheiten (b1), (b2), (b3), und (b4) 100 mol% ergeben.
2. Zusammensetzung nach Anspruch 1, weiterhin aufweisend wenigstens ein organisches Lösungsmittel und/ oder wenigstens einen Entschäumer und/ oder wenigstens ein Additiv und/ oder Wasser.
 - 10 3. Zusammensetzung nach wenigstens einem der Ansprüche 1 oder 2, wobei R1 der Komponente (a) ausgewählt ist von
 - verzweigtem oder unverzweigtem, und
 - gesättigtem oder einfach ungesättigtem oder mehrfach ungesättigtem C1-C3 Alkyl, C5 Alkyl, C7 Alkyl, C9 Alkyl, C11 Alkyl, C13 Alkyl, C15 Alkyl, C17 Alkyl, C19 Alkyl, und/ oder C21 Alkyl.
 - 15 4. Zusammensetzung nach wenigstens einem der vorhergehenden Ansprüche, wobei R1 der Komponente (a) ausgewählt ist von verzweigtem oder unverzweigtem und gesättigtem oder einfach ungesättigtem oder mehrfach ungesättigtem C11 Alkyl, C13 Alkyl, C15 Alkyl, C17 Alkyl, C19 Alkyl, und/ oder C21 Alkyl.
 - 20 5. Zusammensetzung nach wenigstens einem der vorhergehenden Ansprüche, wobei das Molekulargewicht des wenigstens einen Copolymers zwischen 1000 bis 1 000 000 g/mol liegt, vorzugsweise zwischen 1000 und 40 000 g/mol liegt, vorzugsweise zwischen 1000 und 25 000 g/mol liegt.
 - 25 6. Zusammensetzung nach wenigstens einem der vorhergehenden Ansprüche, wobei das wenigstens eine Copolymer wenigstens eine Struktureinheit, ausgewählt von den Formeln (II) und (IV) aufweist und wenigstens eine weitere Struktureinheit ausgewählt von den Formeln (III) und (IV) aufweist.
 - 30 7. Zusammensetzung nach Anspruch 6, wobei das Molverhältnis der wenigstens einen Struktureinheit ausgewählt von den Formeln (II) und (IV) zu der wenigstens einen weiteren Struktureinheit ausgewählt von den Formeln (III) und (V) im Bereich von 1:10 bis 10:1, oder im Bereich von 1:5 bis 5:1, oder im Bereich von 1:2 bis 2:1, oder 1:1 sein kann.
 - 35 8. Zusammensetzung nach wenigstens einem der vorhergehenden Ansprüche, wobei das wenigstens eine Additiv ausgewählt ist von: Tensiden, Rheologiemodifizierern, Bioziden, pH Regulatoren, Komplexbildnern oder Emulgatoren.
 - 40 9. Zusammensetzung nach wenigstens einem der vorhergehenden Ansprüche, wobei das wenigstens eine Lösungsmittel ausgewählt ist von wenigstens einem Alkohol vorzugsweise, Ethylenglykol, 1,2-Propyleneglykol, 1,3-Propyleneglykol, 1,2-Butandiol, 1,4-Butandiol, 1,2-Pentandiol, 1,5-Pentandiol, 1,2-Hexandiol, 1,6-Hexandiol, 1,2-Heptandiol, 1,7-Heptandiol, 1,2-Oktandiol, 1,8-Oktandiol, 1,2-Nonandiol, 1,9-Nonandiol, 1,2-Dekandiol, 1,10-Dekandiol, 1,2-Undekandiol, 1,11-Undekandiol, 1,2-Dodekandiol, 1,12-Dodekandiol, Diethylenglykol, Triethylenglycol, Dipropylenglycol, Tripropylenglykol, Glycerin, Diglycerin, Triglycerin, Sorbitol, Xylitol, Mannitol, oder Mischungen davon.
 - 45 10. Zusammensetzung nach wenigstens einem der vorhergehenden Ansprüche aufweisend bis zu 99,9 Gew.% N-Methyl-N-acylglucamin, bis zu 80 Gew. % Copolymer, und gegebenenfalls bis zu 80 Gew.% wenigstens eines organischen Lösungsmittels, gegebenenfalls bis zu 10 Gew.% wenigstens eines Entschäumers, gegebenenfalls bis zu 50 Gew.% wenigstens eines Additives und gegebenenfalls bis zu 99,9 Gew.% Wasser, wobei die Gewichtsprozent der einzelnen Komponenten der Zusammensetzung immer 100 Gew.% ergeben.
 - 50 11. Verwendung einer Zusammensetzung nach einem der vorhergehenden Ansprüche 1 bis 10 zum Reinigen von Substraten, insbesondere Textilsubstraten, insbesondere zum Entfernen von Ölen und / oder Fetten.
 - 55 12. Verwendung nach einem der vorhergehenden Ansprüche 1 bis 10 für die Herstellung von schwach schäumenden Reinigungslösungen für Substrate aller Arten, insbesondere Textilsubstrate, insbesondere zum Entfernen von Ölen und / oder Fetten.
 13. Verwendung nach Anspruch 11 oder 12 während der Vorbehandlung von Textilsubstraten.

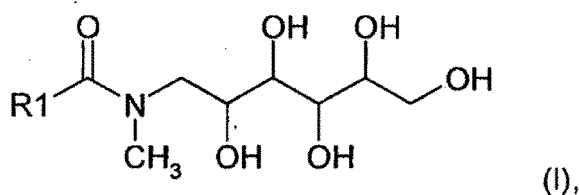
14. Verfahren zum Herstellen einer Zusammensetzung nach wenigstens einem der Ansprüche 1 bis 10, aufweisend die folgenden Schritte:

- falls notwendig, umwandeln einer Komponente von einem physikalisch festen Zustand in einen physikalisch flüssigen Zustand,
- Mischen der Komponenten für die Zusammensetzung nach wenigstens einem der Ansprüche 1 bis 10.

Revendications

1. Composition comprenant

(a) au moins une N-méthyl-N-acylglucamine de Formule (I)

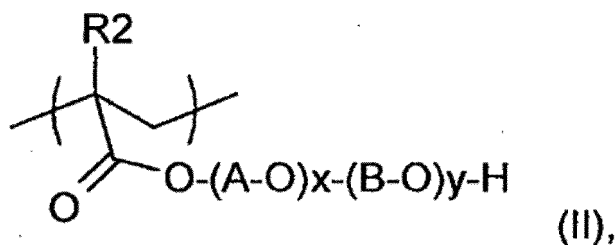


où R1 est choisi parmi

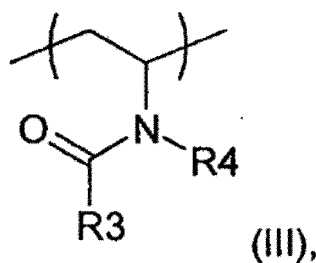
- un résidu alkyle C1-C21 non ramifié ou ramifié, et
 - saturé ou mono-insaturé ou polyinsaturé ;
- et

(b) au moins un copolymère comprenant au moins deux motifs structuraux choisis parmi :

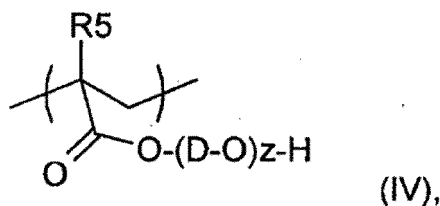
(b1) de 0 à 99 % en moles de motifs structuraux de Formule (II),



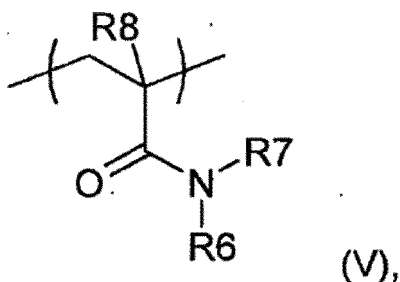
(b2) de 0 à 99 % en moles de motifs structuraux de Formule (III),



(b3) de 0 à 99 % en moles de motifs structuraux de Formule (IV),



10 et
(b4) de 0 à 99 % en moles de motifs structuraux de Formule (V),



où

25 R2 est de l'hydrogène ou un alkyle C1-C6,
A représente des groupes alkylène C2-C4, et
B représente des groupes alkylène C2-C4 à condition que A soit différent de B, et
x, y sont indépendamment l'un de l'autre un entier de 1 à 100,
30 R3, R4 sont indépendamment l'un de l'autre de l'hydrogène ou un alkyle C1-C6, ou en incluant l'atome
d'azote et le groupe carbonyle, forment un cycle ayant 5, 6, ou 7 atomes de cycle,
R5 est de l'hydrogène ou un alkyle C1-C6,
D représente des groupes alkylène C2-C4, et
Z est un entier de 1 à 50,
35 R6, R7 sont indépendamment l'un de l'autre de l'hydrogène ou un alkyle C1-C6, ou en incluant l'atome
d'azote et le groupe carbonyle, forment un cycle ayant 5, 6, ou 7 atomes de cycle,
R8 est de l'hydrogène ou un alkyle C1-C6, et
où les motifs structuraux (b1), (b2), (b3) et (b4) totalisent 100 % en moles.

- 40
2. Composition selon la revendication 1, comprenant en outre au moins un solvant organique et/ou au moins un antimousse et/ou au moins un additif et/ou de l'eau.
 3. Composition selon au moins l'une des revendications 1 ou 2, dans laquelle R1 dans le composant (a) est choisi parmi
 - 45 - un alkyle C1-C3, alkyle C5, alkyle C7, alkyle C9, alkyle C11, alkyle C13, alkyle C15, alkyle C17, alkyle C19 et/ou alkyle C21 ramifié ou non, et
 - saturé ou mono-insaturé ou polyinsaturé.
 4. Composition selon au moins l'une des revendications précédentes, dans laquelle R1 dans le composant (a) est choisi parmi un alkyle C11, alkyle C13, alkyle C15, alkyle C17, alkyle C19 et/ou alkyle C21 ramifié ou non et saturé ou mono-insaturé ou polyinsaturé.
 5. Composition selon au moins l'une des revendications précédentes, dans laquelle le poids moléculaire dudit au moins copolymère est de 1 000 jusqu'à 1 000 000 g/mole, de préférence compris entre 1 000 et 40 000 g/mole, de préférence entre 1 000 et 25 000 g/mole.
 - 55 6. Composition selon au moins l'une des revendications précédentes, dans laquelle ledit au moins copolymère comprend au moins un motif structural choisi parmi les Formules (II) et (IV) et au moins un autre motif structural choisi parmi les Formules (III) et (V).

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7. Composition selon la revendication 6, dans laquelle le rapport molaire dudit au moins motif structural choisi parmi les Formules (II) et (IV) audit au moins autre motif structural choisi parmi les Formules (III) et (V) peut être dans la plage de 1:10 à 10:1, ou dans la plage de 1:5 à 5:1, ou dans la plage de 1:2 à 2:1, ou peut être de 1:1.
- 5 8. Composition selon au moins l'une des revendications précédentes, dans laquelle ledit au moins additif est choisi parmi : les agents tensioactifs, les modificateurs de rhéologie, les biocides, les régulateurs de pH, les agents complexants, ou les émulsifiants.
- 10 9. Composition selon au moins l'une des revendications précédentes, dans laquelle ledit au moins solvant est choisi parmi au moins un alcool, de préférence parmi l'éthylène glycol, le 1,2-propylène glycol, le 1,3-propylène glycol, le 1,2-butanediol, le 1,4-butanediol, le 1,2-pentanediol, le 1,5-pentanediol, le 1,2-hexanediol, le 1,6-hexanediol, le 1,2-heptanediol, le 1,7-heptanediol, le 1,2-octanediol, le 1,8-octanediol, le 1,2-nonanediol, le 1,9-nonanediol, le 1,2-décane-
15 diol, le 1,10-décane-
diol, le 1,2-undécane-
diol, le 1,11-undécane-
diol, le 1,2-dodécane-
diol, le 1,12-dodécane-
diol, le diéthylène glycol, le triéthylène glycol, le dipropylène glycol, le tripropylène glycol, le glycérol, le triglycérol, le sorbitol, le xylitol, le mannitol, ou leurs mélanges.
- 20 10. Composition selon au moins l'une des revendications précédentes comprenant jusqu'à 99,9 % en poids de N-méthyl-N-acylglucamine, jusqu'à 80 % en poids de copolymère, et éventuellement jusqu'à 80 % en poids d'au moins un solvant organique, éventuellement jusqu'à 10 % en poids d'au moins un antimousse, éventuellement jusqu'à 50 % en poids d'au moins un additif, et éventuellement jusqu'à 99,9 % en poids d'eau, où les pourcentages en poids des composants individuels de la composition totalisent toujours 100 % en poids.
- 25 11. Utilisation de la composition selon l'une des revendications 1 à 10 précédentes pour nettoyer des substrats, en particulier des substrats textiles, notamment pour éliminer les huiles et/ou les graisses.
- 30 12. Utilisation de la composition selon l'une des revendications 1 à 10 précédentes pour la fabrication d'une solution de nettoyage peu moussante pour des substrats de tous types, en particulier des substrats textiles, notamment pour éliminer les huiles et/ou les graisses.
- 35 13. Utilisation selon la revendication 11 ou 12 pendant le prétraitement des substrats textiles.
- 40 14. Procédé de fabrication de la composition selon au moins l'une des revendications 1 à 10, comprenant les étapes suivantes :
- si besoin, conversion d'un composant de l'état physique solide à l'état physique liquide,
 - mélange des composants pour obtenir la composition selon au moins l'une des revendications 1 à 10.
- 45
- 50
- 55

REFERENCES CITED IN THE DESCRIPTION

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