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(54) **COMPOSITION AND METHOD FOR REMOVING OR PREVENTING THE APPEARANCE OF FABRIC STAINS**

(57) The present disclosure relates to a composition and method for removing or preventing the appearance of spots or stains in fabrics that comprises the following components: aqueous solvent or an alcohol; an ion exchange salt selected from the following list: sodium bicarbonate, sodium carbonate, calcium chloride, sodium chloride, sodium percarbonate, sodium silicate, sodium carbonate, sodium metasilicate, or mixtures thereof; or mixtures thereof; a base or an acid for degradation of the organic matter; a remover of textile fibre aggregates; a surfactant agent; and optionally a preservative agent.

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Description

Technical field

[0001] The present description relates to a composition and a method for removing or preventing the appearance of fabric stains or spots, namely stains of sweat, or deodorant, or antiperspirant, or combinations thereof, in particular for removing stains in the armpit region of clothing items.

Background

[0002] The product of the present invention is a prewash detergent that eliminates and prevents the appearance of sweat spots in clothing.

[0003] The appearance of sweat spots is a slow process that appears by daily use of deodorant in the armpits by reaction with the sweat of each person. The reaction in the fabric varies according to the fabric colour and type.

[0004] Independently of the geographic localization, whether hot or cold, humid or dry countries, the problem of sweat spots is global, as 90% of the population experiences this problem.

[0005] From students that wear uniforms in schools to security forces (PSP - Public Security Police, GNR - National Republican Guard, Municipal Police Force), firefighters, army military forces, healthcare professionals, executives, sportspersons in different fields from martial arts to football players, and uniform wearing professionals (in hospitals, factories, supermarkets, security guards, among others).

[0006] The sweat spots in clothing can have different colours and shapes. There are spots of yellow and white colour and/or mixtures thereof. The yellow spots, in general appear in white and colour clothing and the white spots, in general, appear in dark clothing.

[0007] In terms of shapes, the type of spot varies with the spot age. The continuous washing of the clothing items makes the spots more visible, their size increase and the fabric gets thicker with some gum derived from the reaction between the deodorant, sweat and washing detergent. In practice, what happens is that when the clothing item is subjected to a continuous and repeating process of handwashing or machine washing, sun drying or machine drying and ironing, the spot becomes changed and consequently the respective fabric becomes progressively harder.

[0008] To date, there is no product on the market that completely solves this problem. All products tested during the production testing of the product of the present invention only partially removed the spots, keeping the garments in question damaged or even unusable.

[0009] US8268769 describes an aqueous solution that contains a combination of phosphoric acid, emulsifying wax, triethylene glycol, cocamidopropyl betaine, lauryl alcohol, ethylenediaminetetraacetic acid - EDTA (polyamine carboxylic acid) and sodium hydrochloride is applied directly in clothing spots that are caused by transpiration and/or the interaction of transpiration with commercial antiperspirants containing aluminium compounds. The aqueous solution converts aluminium oxide in a water-soluble phosphate compound that can be washed at the time of washing of clothing, effectively removing the spot.

[0010] CA2813508A1 describes a stain remover of an antiperspirant product.

[0011] DE19724106A1 describes a textile pre-treatment for removing transpiration spots before, for example, a dry cleaning.

[0012] CN1209450C describes a clothing washing powder capable of eliminating yellow spots of human sweat.

[0013] CN1041178A describes a detergent for sweat.

[0014] CN104277937E describes a remover of soap spots caused by washing.

[0015] CN1046569A describes a fabric treatment method for anti-stains of oil and sweat and the processing agent thereof.

[0016] CN104059782A describes a washing powder for stain removal.

[0017] US20130117946A1 describes compositions and methods for removing stains from garments, including water sensitive protein fibres, without incurring any fibre damage or dye/colour loss, in wet and dry cleaning processes.

[0018] JP5908471B2 describes a textile treatment composition for removing deodorant spots.

[0019] CN102395348B describes a surfactant for reducing the application spot caused by antiperspirant. US20120304397A1 describes a composition for spot removal in the armpit region.

[0020] US20110271458A1 describes a composition and method for removing stains from fabrics.

[0021] These facts are described in order to illustrate the technical problem solved by the embodiments of the present document.

General Description

[0022] One aspect of the present disclosure describes a composition for removing or preventing the appearance of spots or stains in fabrics that comprises the following components:

aqueous solvent or an alcohol;
an ion exchange salt, selected from the following list: sodium bicarbonate, sodium carbonate, calcium chloride, sodium chloride, sodium percarbonate, sodium silicate, sodium carbonate, sodium metasilicate, or mixtures thereof; preferably sodium carbonate, or mixtures thereof;
a base or an acid for degradation of the organic matter of spots or stains of a fabric;
a remover of textile fibre aggregates is a phosphonate;

a surfactant agent;
and optionally a preservative agent.

[0023] The unique formula of the composition of the present disclosure makes it possible to remove any type of sweat and/or deodorant spot, in all types of clothing and in fabrics of any colour, namely white, coloured and dark clothing, wherein the washing instructions of each item should be followed. The combination of each component and the quantities used allow the complete removal of stains and spots from fabrics and textile structures.

[0024] In another embodiment, the invention discloses a composition that comprises:

70-95 % (w/w) of an aqueous solvent and/or an alcohol; preferably 80-95 % (w/w);
0.5-6 % (w/w) of an ion exchange salt; preferably 1-4 % (w/w);
0.1-10 % (w/w) of a base or an acid for degradation of the organic matter, preferably 0.5-5 % (w/w);
0.5-10 % (w/w) of a remover agent of textile fibre aggregates, preferably 0.5-5 % (w/w);
1-20 % (w/w) of a surfactant agent, preferably 2-10 % (w/w);
0.1-5 % (w/w) of a preservative agent; preferably 0.1-0.5 % (w/w).

[0025] In another embodiment, the invention discloses a composition wherein the surfactant agent is non-ionic, cationic, anionic or mixtures thereof.

[0026] In another embodiment, the invention discloses a composition wherein the ion exchange salt is sodium bicarbonate or sodium carbonate, preferably sodium carbonate.

[0027] In another embodiment, the invention discloses a composition wherein the composition is in the form of a liquid.

[0028] In another embodiment, the invention discloses a composition wherein the composition is an aqueous solution.

[0029] In another embodiment, the invention discloses a composition wherein the solvent is water.

[0030] In another embodiment, the invention discloses a composition wherein the stain is a stain of perspiration, namely a sweat stain.

[0031] In an embodiment, the invention discloses an aqueous solution, foam, gel or powder that comprises the composition described in the present invention.

[0032] Another aspect of the present disclosure describes the use of the composition described in any previous claims as agent for removing and preventing the appearance of sweat stains.

[0033] Another aspect of the present disclosure describes a method for removing or preventing the appearance of spots or stains in fabrics that comprises the following steps of: placing the composition described in the present disclosure in contact with the area to be treated; washing or rinsing in order to remove the spot or stain from the fabric.

[0034] It is an object of the present embodiments to provide a solution for removing sweat stains from garments, namely on the armpit area.

Brief description of the drawings

[0035] For an easier understanding, figures are herein attached, which represent preferred embodiments that do not intend to limit the object of the present description.
Figures 1 and 2: Examples of sweat stain removal with the procedure of example 1 (left-hand side: pre-treatment; right-hand side: post-treatment).

Detailed Description

[0036] The present disclosure relates to a composition and method for removing or preventing the appearance of spots or stains in fabrics that comprises the following components: aqueous solvent or an alcohol; an ion exchange salt, selected from the following list: sodium bicarbonate, sodium carbonate, calcium chloride, sodium chloride, sodium percarbonate, sodium silicate, sodium carbonate, sodium metasilicate, or mixtures thereof; or mixtures thereof; a base or an acid for degradation of the organic matter; a remover of textile fibre aggregates; a surfactant agent; and optionally a preservative agent.

[0037] The composition described in the present disclosure eliminates sweat spots or stains from textile structures, namely from shirts, t-shirts and other garments. The results are effective in white, denim or coloured clothing (see figures 1 and 2). The results of treatment of fabrics with the composition described in the present disclosure are felt immediately, preferably at the end of 2 minutes.

[0038] In a preferred embodiment, when the spots are embedded in the fabric these are removed at the end of 5 minutes, preferably at the end of 7 minutes, more preferably at the end of 9 minutes.

[0039] In an embodiment, the surfactant of the present composition can be selected from the following list:

Non-ionic surfactants, such as: ethoxylated fatty alcohol (7 mol), ethoxylated C_{9-11} alcohol, ethoxylated C_{10} alcohol, ethoxylated C_{9-11} alcohol, ethoxylated C_{9-11} alcohol (4 mol), ethoxylated C_{9-11} alcohol (6 mol), ethoxylated C_{9-11} alcohol (8 mol), ethoxylated C_{9-11} alcohol <2.5 mol, ethoxylated C_{16-18} alcohols, propoxylated ethoxylated C_{12-14} alcohols, ethoxylated C_{12-14} alcohols (1-2.5 mol), ethoxylated C_{12-14} alcohols (1-6 mol), ethoxylated C_{12-14} alcohols, ethoxylated C_{12-14} alcohols (5-15 mol), ethoxylated C_{16-18} alcohols, ethoxylated C_{6-12} alcohols, branched ethoxylated C_{11-13} alcohol, ethoxylated C_{9-11} alcohol, ethoxylated alkylamide, propylamine, ethoxylated N-(hydroxyethyl)unsaturated C_{18} and C_{12-18} amides, ethoxylated cocoalkyl amine, ethox-

ylated tallow alkyl amines (> 5 mol), ethoxylated tallow alkyl amines (1-4.5 mol), ethoxylated tallow alkyl amines (10-15 mol), ethoxylated N-tallow alkyltrimethylenediamines, propoxylated ethoxylated tallow alkyl amines, ethoxylated and propoxylated ethylenediamine (1-8.5 mol), ethoxylated glycerine, ethoxylated acrylic acid esters, oleylamine and ethoxylated lanolin acrylic acid esters (30 mol) or mixtures thereof, preferably ethoxylated C_{9-11} alcohol; more preferably ethoxylated fatty alcohol (7 mol).

Anionic surfactants, such as: dodecyloxypoli(ethyleneoxy)ethyl sulfate, sodium salt, acydilsulfonic, C14-16-hydroxyalkane and C14-16-alkene, sulfonic acid (LABSA), alkyl polyglucosides, lauryl ether disodium sulfosuccinate, lauryl ether sodium sarcosinate, lauryl ether sodium sulfate, 2-ethylhexyl sodium sulfate, sodium cocoyl glutamate, or mixtures thereof.

Cationic surfactants, such as: quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride, C_{10-20} and C_{16-18} fatty acids, quaternary ethoxylated coco amine, quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride; quaternary ammonium compounds: ethoxylated (2-amino-2-oxoethyl)bis(hydroxyethyl)tallow alkyl, chlorides, quaternary amino compounds, (unsaturated C_{16-18} and C_{18} alkyl)trimethyl, chlorides, quaternary amino compounds, benzyl C_{12-16}, -alkyldimethyl chlorides, benzyl-alkyl-alkyl-C_{10-16}, benzyl-alkylsulfate of C_{10-16}, benzyl-C_{12-18}-alkyldimethyl, thiocyanates, benzyl-C_{14-18}-alkyldimethyl, quaternary amino compounds, bis(hydrogenated tallow alkyl)dimethyl, alkylethyldimethyl, ethyl sulfates, alkyltrimethyl C_{16-18}, alkyltrimethyl C_{20-22}, coco alkylbis(hydroxyethyl)methyl, coco alkyltrimethyl, coco alkyltrimethyl, or mixtures thereof; preferably quaternary ethoxylated coco amine; more preferably quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride.

[0040] In one embodiment, the preservative is selected from the following list: benzalkonium chloride, methylisothiazolinone, isothiazolinone, or mixtures thereof; preferably benzalkonium chloride; more preferably methylisothiazolinone and isothiazolinone.

[0041] In one embodiment, the acid can be selected from the following list: phosphoric acid, hydrochloric acid, sulphuric acid, 2-phosphonobutane-1,2,4-tricarboxylic acid; glacial acetic acid; technical acetic acid; citric acid; stearic acid; formic acid; nitric acid, oleic acid, peracetic acid, sulfamic acid, sulfonic acid (LABSA), or mixtures thereof; preferably phosphoric acid; more preferably sulfonic acid.

[0042] In one embodiment, the base can be selected from the following list: sodium hydroxide, potassium hydroxide, tetrapotassium pyrophosphate, tetrasodium pyrophosphate, diethylenetriaminepentamethylene heptasodium salt, sodium silicate, sodium 2-ethylhexil sulfate, sodium cocoyl glutamate, or mixtures thereof; preferably potassium hydroxide; more preferably sodium hydroxide.

[0043] In one embodiment, the ion exchange salt can be selected from the following list: sodium bicarbonate, sodium carbonate, calcium chloride, sodium chloride, sodium percarbonate, sodium silicate, sodium carbonate, sodium metasilicate or mixtures thereof; preferably sodium bicarbonate; more preferably sodium carbonate.

[0044] In one embodiment, phosphonate can be selected from the following list - HEDP (etidronic acid), ATMP (aminotris(methylene phosphonic acid)), DTPMP (diethylenetriamine-penta(methylene phosphonic acid)), EDTMP (ethylenediamine-tetra(methylene phosphonic acid)), HDTMP (hexadiamine-tetra(methylene phosphonic acid)), HEMPA (hydroxyethylamine-di(methylene phosphonic acid)), PBTC (2-phosphonobutane-1,2,4-tricarboxylic acid), BHMTMP (bis(hexamethylene)triamine-pentakis(methylphosphonic acid)), EDTA (ethylenediaminetetraacetic acid), NTA (nitrilotriacetic acid), or mixtures thereof; preferably ATMP; more preferably DTPMP.

[0045] In one embodiment, the surfactant agent increases the surface area and disaggregates the agglomerates; the base or the acid degrades the organic matter and the ion exchange salt captures the aluminium.

Example 1

[0046] In one embodiment, the composition of the present disclosure can be prepared in the following way:

dissolving 25 g of sodium carbonate in 903 g of water;
adding to previous solution 10 g of sodium hydroxide and 10 g of DTPMP (diethylenetriamine-penta(methylene phosphonic acid));
adding to previous solution 20 g of ethoxylated C_{9-11} alcohol, and 30 g of quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride;
finally adding 2 g of preservative, methylisothiazolinone and isothiazolinone.

[0047] In one embodiment, the composition for removing stains described in the present disclosure comprises:

a solvent: water, alcohols, among others;
an ion exchange salt selected from the following list: sodium bicarbonate, sodium carbonate, calcium chloride, sodium chloride, sodium percarbonate, sodium silicate, sodium carbonate, sodium metasilicate, or mixtures thereof; preferably sodium carbonate, or mixtures thereof;
a base or acid for carrying out the degradation of the organic matter;
a phosphate and/or phosphonates that act as sequestrant agent(s) for the deodorant/antiperspirant, able for removing the fibre aggregates;
a surfactant agent: non-ionic, cationic, anionic or mixtures thereof.

and optionally a preservative agent.

[0048] In one embodiment, after several attempts it was found that:

the surfactant agent breaks apart the molecules in contact with the fibre,
the sodium carbonate binds to aluminium,
the DTPMP (diethylenetriamine-penta(methylene phosphonic acid)) captures the aluminium bound to sodium carbonate,
the sodium hydroxide and the surfactants break apart the organic part.

[0049] In one embodiment, the product of the present invention is applied in different ways directly in the area to be treated, which should be previously moistened. This is followed by the friction step of the fabric against itself, in the area to be treated, in average for 2 minutes.

[0050] Then, the sweat spot of the clothing item should be rinsed, and the product of the present invention should be reapplied and again the fabric should be rubbed against itself.

[0051] The removal time of the spot varies according to the intensity and hardness of the spot, wherein:

a spot of low intensity takes about 1/2 minutes to be totally removed.
a spot of medium intensity takes about 2/5 minutes to be totally removed.
a spot of high intensity takes about 10/15 minutes to be totally removed.

[0052] After the treatment, the clothing should be left to dry and should not be directly exposed to sunlight

[0053] The results are immediate, however the whole item should again be washed in the washing machine or by hand.

[0054] The product of the present invention also acts as preventive treatment for the appearance of spots. To ensure the non-appearance of sweat spots in garments, the product of the present invention should be applied in the areas usually affected before placing it in the washing machine. This way, the appearance or reappearance of spots is avoided or prevented.

[0055] The term "comprises" or "comprising" when used in this document is intended to indicate the presence of characteristics, elements, integers, steps and components mentioned, but does not preclude the presence or addition of one or more other characteristics, elements, integers, steps and components, or groups thereof.

[0056] The described embodiments are combinable with each other.

[0057] The present invention is obviously not restricted in any way to the embodiments described in this document and a person of ordinary skill in the art could foresee many possibilities of modification of the invention and of substitutions of technical characteristics by other equivalents, depending on the requirements of each situation, such as defined in the appended claims.

[0058] The following claims define additional embodiments of the present description.

Claims

1. Composition for removing or preventing the appearance of spots or stains in fabrics that comprises the following components:

   70-95 % (w/w) of an aqueous solvent or an alcohol;
   0.5-6 % (w/w) of an ion exchange salt, selected from the following list: sodium bicarbonate, sodium carbonate, calcium chloride, sodium chloride, sodium percarbonate, sodium silicate, sodium carbonate, sodium metasilicate, or mixtures thereof; preferably sodium carbonate, or mixtures thereof;
   a base or an acid for degradation of the organic matter of spots or stains of a fabric;
   1-20 % (w/w) of a remover of textile fibre aggregates is a phosphonate;
   a surfactant agent;
   and optionally 0.1-5 % (w/w) of a preservative agent.

2. Composition according to the previous claims that comprises

   80-95 % (w/w) of an aqueous solvent and/or an alcohol; preferably;
   1-4 % (w/w) of an ion exchange salt;
   0.5-5 % (w/w) of a base or an acid for degradation of the organic matter;
   0.5-5 % (w/w) of a remover agent of textile fibre aggregates;
   2-10 % (w/w) of a surfactant agent;
   0.1-0.5 % (w/w) of a preservative agent.

3. Composition according to any one of the previous claims wherein the phosphonate is selected from the following list: etidronic acid (HEDP), aminotris(methylene phosphonic acid) (ATMP), diethylenetriamine-penta(methylene phosphonic acid) (DTPMP), ethylenediamine-tetra(methylene phosphonic acid) (EDTMP), hexadiamine-tetra(methylene phosphonic acid) (HDTMP), hydroxyethylamine-di(methylene phosphonic acid) (HEMPA), 2-phosphonobutane-1,2,4-tricarboxylic acid (PBTC), bis(hexamethylene)triamine-pentakis(methylphosphonic acid) (BHMTMP), ethylenediaminetetraacetic acid (EDTA), nitrilotriacetic acid (NTA) or mixtures thereof; preferably ATMP, DTPMP, or mixtures thereof; more preferably DTPMP.

4. Composition according to any one of the previous claims wherein the surfactant agent is non-ionic, cationic, anionic or mixtures thereof.

5. Composition according to any one of the previous claims wherein the non-ionic surfactant agent is selected from the following list:
ethoxylated fatty alcohol (7 mol), ethoxylated C_{9-11} alcohol, ethoxylated C_{10} alcohol, ethoxylated C_{9-11} alcohol, ethoxylated C_{9-11} alcohol (4 mol), ethoxylated C_{9-11} alcohol (6 mol), ethoxylated C_{9-11} alcohol (8 mol), ethoxylated C_{9-11} alcohol <2.5 mol, ethoxylated C_{16-18} alcohols, propoxylated ethoxylated C_{12-14} alcohols, ethoxylated C_{12-14} alcohols (1-2.5 mol), ethoxylated C_{12-14} alcohols (1-6 mol), ethoxylated C_{12-14} alcohols, ethoxylated C_{12-14} alcohols (5-15 mol), ethoxylated C_{16-18} alcohols, ethoxylated C_{6-12} alcohols, branched ethoxylated C_{11-13} alcohol, ethoxylated C_{9-11} alcohol, ethoxylated alkylamide, propylamine, ethoxylated N-(hydroxyethyl)unsaturated C_{18} and C_{12-18} amides, ethoxylated cocoalkyl amine, ethoxylated tallow alkyl amines (> 5 mol), ethoxylated tallow alkyl amines (1-4.5 mol), ethoxylated tallow alkyl amines (10-15 mol), ethoxylated N-tallow alkyltrimethylenediamines, propoxylated ethoxylated tallow alkyl amines, ethoxylated and propoxylated ethylenediamine (1-8.5 mol), ethoxylated glycerine, ethoxylated acrylic acid esters, oleylamine and ethoxylated lanolin acrylic acid esters (30 mol) or mixtures thereof, preferably ethoxylated C_{9-11} alcohol; more preferably ethoxylated fatty alcohol (7 mol); and mixtures thereof.

6. Composition according to any one of the previous claims wherein the anionic surfactant agent is selected from the following list:
dodecyloxypoli(ethyleneoxy)ethyl sulfate, sodium salt, acydilsulfonic, C_{14-16}-hydroxy alkane and C_{14-16}-alkene, sulfonic acid (LABSA), alkyl polyglucosides, lauryl ether disodium sulfosuccinate, lauryl ether sodium sarcosinate, lauryl ether sodium sulfate, 2-ethylhexyl sodium sulfate, sodium cocoyl glutamate, or mixtures thereof.

7. Composition according to any one of the previous claims wherein the cationic surfactant agent is selected from the following list: quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride, C_{10-20} and C_{16-18} fatty acids, quaternary ethoxylated coco amine, quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride; quaternary ammonium compounds: ethoxylated (2-amino-2-oxoethyl)bis(hydroxyethyl) tallow alkyl, chlorides, quaternary amino compounds, (unsaturated C_{16-18} and C_{18} alkyl)trimethyl, chlorides, quaternary amino compounds, benzyl C_{12-16}, -alkyldimethyl chlorides, benzyl-alkyl-alkyl-C_{10-16}, benzyl-alkylsulfate of C_{10-16}, benzyl-C_{12-18}-alkyldimethyl, thiocyanates, benzyl-C_{14-18}-alkyldimethyl, quaternary amino compounds, bis(hydrogenated tallow alkyl)dimethyl, alkylethyldimethyl, ethyl sulfates, alkyltrimethyl C_{16-18}, alkyltrimethyl C_{20-22}, coco alkylbis(hydroxyethyl)methyl, coco alkyltrimethyl, coco alkyltrimethyl, or mixtures thereof; preferably quaternary ethoxylated coco amine; more preferably quaternary C_{12-14} alkylmethylamine ethoxylated methyl chloride and mixtures thereof.

8. Composition according to any one of the previous claims wherein the preservative is selected from the following list: benzalkonium chloride, methylisothiazolinone, isothiazolinone, preferably benzalkonium chloride; or mixtures thereof preferably methylisothiazolinone and isothiazolinone.

9. Composition according to any one of the previous claims wherein the acid is selected from the following list: phosphoric acid, hydrochloric acid, sulphuric acid, 2-phosphonobutane-1,2,4-tricarboxylic acid - PBTC, glacial acetic acid, acetic acid, citric acid, stearic acid, formic acid, nitric acid, oleic acid, peracetic acid, sulfamic acid, sulfonic acid (LABSA), or mixtures thereof; preferably phosphoric acid; more preferably sulfonic acid.

10. Composition according to any one of the previous claims wherein the base is selected of the following list: sodium hydroxide, potassium hydroxide, tetrapotassium pyrophosphate, tetrasodium pyrophosphate, diethylenetriaminepentamethylene heptasodium salt, sodium silicate, 2-ethylhexyl sodium sulfate, sodium cocoyl glutamate, or mixtures thereof; preferably potassium hydroxide; more preferably sodium hydroxide.

11. Composition according to any one of the previous claims wherein the ion exchange salt is sodium bicarbonate or sodium carbonate, preferably sodium carbonate.

12. Composition according to any one of the previous claims wherein the composition is in the form of a liquid, preferably an aqueous solution.

13. Composition according to any one of the previous claims wherein the stain is a stain of perspiration, namely a sweat stain.

14. Aqueous solution, foam, gel or powder that comprises the composition described in any one of the previous claims.

15. Use of the composition described in any one of the previous claims as agent for removing and/or preventing the appearance of sweat stains.

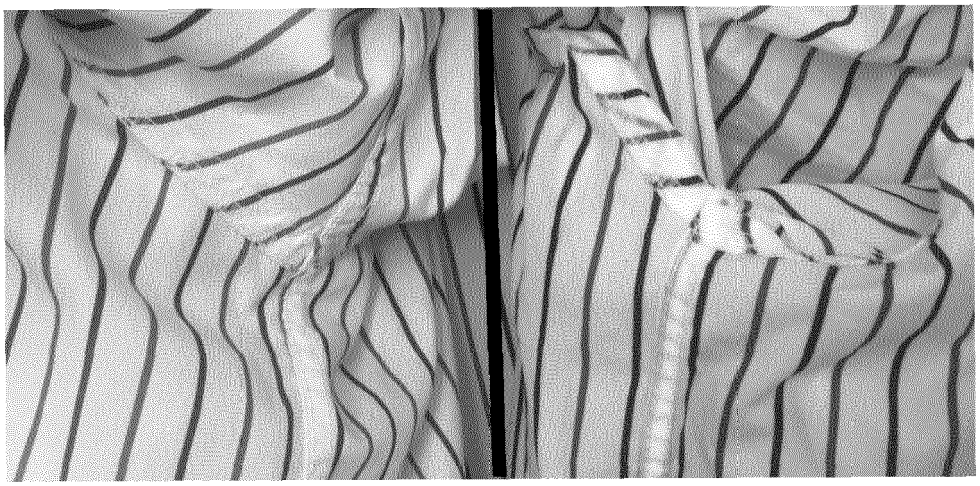

Fig. 1

Fig. 2

Europäisches Patentamt
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EUROPEAN SEARCH REPORT

Application Number
EP 20 18 1210

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	WO 2017/102868 A1 (HENKEL AG & CO KGAA [DE]) 22 June 2017 (2017-06-22) * page 1, paragraph 1; tables 4-6 * * page 2, paragraph 3 - page 3, paragraph 1 * * page 4, paragraph 3 - paragraph 4 * * page 4, paragraph 7 - page 5, paragraph 3 * * page 6, paragraph 2 * * page 6, last paragraph - page 9, paragraph 4; claims * -----	1-14 15	INV. C11D3/04 C11D3/08 C11D3/10 C11D3/20 C11D3/36 C11D3/39 C11D11/00 C11D17/00
X Y	EP 0 953 631 A1 (ECOLAB INC [US]) 3 November 1999 (1999-11-03) * paragraph [0001]; examples 1,4; table 3 * -----	1-7,10, 11,13 15	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	29 October 2020	Marttin, Emmeline

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 20 18 1210

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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