(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 321 397 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
06.03.2013 Bulletin 2013/10

(21) Application number: **09812692.3**

(22) Date of filing: **20.07.2009**

(51) Int Cl.:
C11D 3/37 *(2006.01)* ***C11D 17/00*** *(2006.01)*

(86) International application number:
PCT/EP2009/059316

(87) International publication number:
WO 2010/028898 (18.03.2010 Gazette 2010/11)

(54) **IMPROVEMENTS RELATING TO FABRIC CONDITIONERS**

VERBESSERUNGEN IM ZUSAMMENHANG MIT WÄSCHEWEICHMACHERN

AMELIORATIONS ASSOCIEES AUX ADOUCISSANTS TEXTILES

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

(30) Priority: **12.09.2008 EP 08164213**

(43) Date of publication of application:
18.05.2011 Bulletin 2011/20

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  Designated Contracting States:
  AT BE BG CH CZ DE DK EE ES FI FR GR HR HU IS IT LI LT LU LV MC MK NL NO PL PT RO SE SI SK SM TR

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Description

Technical Field

[0001] The present invention relates to "superabsorbent" particles and their use to improve the in-wear comfort of fabrics, especially synthetic fabrics, by increasing fabric absorbency.

Background and Prior Art

[0002] The comfort of textile articles such as clothes can be compromised during wear as a result of sweating by the wearer. Synthetic fabrics, such as polyester, tend to feel less comfortable than cotton during sweating because they absorb very little moisture. In contrast cotton, which can absorb over 10 % of its weight in moisture, continues to feel dryer to the wearer for longer, even at moderate levels of sweating.

[0003] There is a need to improve the in-wear comfort of materials during sweating.

[0004] JP03220371A (Kanebo) discloses the coating of the surface of synthetic textile with a resin which contains particles of the silk protein "fibroin". The fabric is tack-free and flexible and has high moisture-permeability. Excellent dry touch and quality is said to be produced at a fibroin content of 10-35 wt %.

[0005] JP2000110027A (Mitsubishi) discloses the introduction of a fine clay particle e.g. montmorillonite during the preparation (polymerisation) of thermoplastic polyester, to give a water absorbing polyester. Preferably the clay is swollen with water and water replaced with glycol. Treated fabrics have good spinability, dyeability and softness.

[0006] JP08041783A (Toray) discloses the application of a sizing agent (e.g. starch) to polyester before a high temperature shape-setting process is carried out. The sizing agent is removed with enzyme but the decomposition product allowed to remain on surface of fabric. The treated fabric has soft feeling and good water absorption properties by increasing space between fibers.

[0007] W09849220A (Rhodia) discloses a soft, hydrophilic fabric which has been treated with functionalised polyorganosiloxane.

[0008] EP 0071481A discloses suds control agents comprising a core of gelatinised starch having a silicone oil sorbed thereon.

[0009] We have now found that the absorbency of fabrics can be increased by treating them with superabsorbent polymers. This results in cotton and synthetic fabrics that can absorb a significant amount of moisture without feeling wet.

[0010] Many superabsorbent polymers, however, become sticky when they absorb water thus making the treated fabrics unpleasant to wear, for example modified starches and sodium carboxymethyl cellulose. We have found that superabsorbent polymer particles, which are coated with a porous silicone based shell, do not feel sticky when they absorb water and so the fabrics remain comfortable to wear.

Definition of the Invention

[0011] According to a first aspect of the invention there is provided a use of a superabsorbent particle, comprising a superabsorbent polymeric core and a hydrophobic porous shell in the domestic treatment of fabric, wherein the shell comprises silicone.

[0012] According to a second aspect of the invention there is provided a non-aqueous fabric treatment composition for domestic use, comprising superabsorbent particles and a solvent, wherein the superabsorbent particles comprise a superabsorbent polymeric core and a porous shell, wherein the shell comprises silicone.

[0013] According to a third aspect of the invention, there is provided a use of the composition of the second aspect of the invention to increase the moisture absorption of fabric.

[0014] According to a fourth aspect of the invention, there is provided a use of the composition of the second aspect of the invention to improve the in-wear comfort of fabric.

[0015] According to a fifth aspect of the invention, there is provided a method of treating fabric, comprising contacting fabric with a composition of the second aspect of the invention.

Detailed Description of the Invention

The Superabsorbent Particles

[0016] The superabsorbent particles for use in the invention and in the compositions of the invention are capsules (or "encaps"), with a superabsorbent polymeric core and a porous shell. The capsules expand as water is absorbed by the superabsorbent core. The superabsorbent particles of the invention do not feel sticky when they absorb moisture.

The Core

[0017] The superabsorbent polymeric core comprises a superabsorbing polymer. Any suitable superabsorbent polymer may be used, including cellulose-based and polyacrylic acid-based polymers. Superabsorbent polymers are polymers that are capable of absorbing and holding large amounts of water or aqueous solvents by forming aqueous gels.

[0018] Suitable superabsorbent polymers include synthetic polymers, in particular acrylic- and methacrylic-acid-based, cross-linked synthetic polymers and copolymers. In the context of this invention, polyacrylic acid superabsorbers refer to acrylic based polymers containing more than 50 % acrylic acid monomer. These known synthetic absorbents are virtually water insoluble. This class of superabsorbent polymers includes crosslinked polyacrylic acid or copolymers, starch grafted polyacrylonitrile hydrolysates, starch and acrylic acid grafted crosslinked polymers as well as hydrolysates of copolymers based on vinylacetate and acrylic esters. In such polymers and copolymers, about 60 to 90 % of all carboxylic groups may be neutralised by alkaline metals. A preferred polyacrylic acid-based polymer is cross-linked polymethacrylic acid.

[0019] Starch-based superabsorbent polymers are also suitable, for example starch acrylonitrile graft polymers and gelatinized starch derivatives. Cellulose-based polymers may also be used, for example derivatives of alkyl- or hydroxy-alkyl-cellulose, carboxymethylcellulose and polysaccharide-based derivatives. A preferred cellulose-based superabsorbing polymer is Sodium Carboxy Methyl Cellulose (SCMC).

[0020] Further suitable polymers as well as crosslinkers are those given in US2005/0013865 at paragraphs [0023] to [0035], and are incorporated herein by reference.

The Shell

[0021] The shell prevents sticky feeling when the absorbent material is on the fabric. The shell is hydrophobic in nature and comprises silicone.

[0022] The porous shell expands with the core as the core absorbs fluid (such as sweat). This expansion prevents the splitting of the shell and consequent failure of the particle. Suitable silicone based materials are those wherein the silicone is capable of expanding as the core absorbs fluid. A particularly preferred silicone shell is an amidomethicone.

[0023] Particle size and average diameter of the capsules can vary from about 10 nanometers to about 1000 microns, preferably from about 100 nanometers to about 100 microns, more preferably from about 200 nanameters to about 40 microns, even more preferably from about 300 nanometers to 15 microns. A particularly preferred range is from about 300 nanometers to 8 microns. The capsule distribution can be narrow, broad or multimodal. Multimodal distributions may be composed of different types of capsule chemistries.

[0024] The amount of superabsorbent polymer particles in the compositions of the invention is from 0.01 to 50 wt %, preferably from 0.1 to 15 wt %, more preferably from 4 to 11 wt %, based on the total weight of the composition.

[0025] The superabsorbent polymer particles are suitably used in an amount of from 0.1 to 15 wt % by weight of the fabric. When the fabric is cotton, the amount used is preferably from 1 to 15, more preferably from 5 to 15 wt % by weight of the fabric. When the fabric is synthetic, the amount used is preferably from 0.1 to 10, more preferably from 1 to 10 wt % by weight of the fabric.

[0026] The preferred superabsorbent polymer particles are Sofcare S-SP manufactured by Kao Corporation. These particles are capsules, which comprise cross-linked polymethacrylic acid (neutralised with Na salt) and which are coated with an expandable silicone.

The Solvent

[0027] The compositions of the invention may be non-aqueous. Such compositions may comprise a suitable non-aqueous solvent. Suitable solvents include cyclic siloxanes such as decamethylcyclopentasiloxane (D5) and decamethylcyclohexasiloxane (D6). Further examples include hydrocarbons such as pentane and hexane.

Perfume

[0028] The compositions of the invention preferably comprise one or more unconfined perfume, by which is meant a non-encapsulated perfume. Any suitable perfume or mixture of perfumes may be used.

[0029] The perfume must be compatible with the carrier oil as described above and must be able to permeate the shell of the capsule. Those with skill in the art will appreciate that the present invention may contain a single ingredient, but it is much more likely that the present invention will comprise at least eight or more fragrance chemicals, more likely to contain twelve or more and often twenty or more fragrance chemicals. The present invention also contemplates the use of complex fragrance formulations containing fifty or more fragrance chemicals, seventy five or more or even a hundred or more fragrance chemicals in a fragrance formulation. Suitable unconfined perfumes for use in the present

invention include those disclosed in EP1533364A2 (IFF).

[0030] The perfume is preferably present in an amount from 0.01 to 10 % by weight, more preferably from 0.05 to 5 % by weight, even more preferably from 0.1 to 4.0 %, most preferably from 0.2 to 4.0 % by weight, based on the total weight of the composition.

[0031] Useful components of the perfume include materials of both natural and synthetic origin. They include single compounds and mixtures. Specific examples of such components may be found in the current literature, e.g., in Fenaroli's Handbook of Flavor Ingredients, 1975, CRC Press; Synthetic Food Adjuncts, 1947 by M. B. Jacobs, edited by Van Nostrand; or Perfume and Flavor Chemicals by S. Arctander 1969, Montclair, N.J. (USA). These substances are well known to the person skilled in the art of perfuming, flavouring, and/or aromatizing consumer products, i.e., of imparting an odour and/or a flavour or taste to a consumer product traditionally perfumed or flavoured, or of modifying the odour and/or taste of said consumer product.

[0032] By perfume in this context is not only meant a fully formulated product fragrance, but also selected components of that fragrance, particularly those which are prone to loss, such as the so-called 'top notes'.

[0033] Top notes are defined by Poucher (Journal of the Society of Cosmetic Chemists 6(2):80 [1955]). Examples of well known top-notes include citrus oils, linalool, linalyl acetate, lavender, dihydromyrcenol, rose oxide and cis-3-hexanol. Top notes typically comprise 15-25%wt of a perfume composition and in those embodiments of the invention which contain an increased level of top-notes it is envisaged at that least 20%wt would be present within the encapsulate.

[0034] Some or all of the perfume or pro-fragrance may be encapsulated, typical perfume components which it is advantageous to encapsulate, include those with a relatively low boiling point, preferably those with a boiling point of less than 300, preferably 100-250 Celsius and pro-fragrances which can produce such components.

[0035] It is also advantageous to encapsulate perfume components which have a low Clog P (ie. those which will be partitioned into water), preferably with a Clog P of less than 3.0. These materials, of relatively low boiling point and relatively low Clog P have been called the "delayed blooming" perfume ingredients and include the following materials:

Allyl Caproate, Amyl Acetate, Amyl Propionate, Anisic Aldehyde, Anisole, Benzaldehyde, Benzyl Acetate, Benzyl Acetone, Benzyl Alcohol, Benzyl Formate, Benzyl Iso Valerate, Benzyl Propionate, Beta Gamma Hexenol, Camphor Gum, Laevo-Carvone, d-Carvone, Cinnamic Alcohol, Cinamyl Formate, Cis-Jasmone, cis-3-Hexenyl Acetate, Cuminic Alcohol, Cyclal C, Dimethyl Benzyl Carbinol, Dimethyl Benzyl Carbinol Acetate, Ethyl Acetate, Ethyl Aceto Acetate, Ethyl Amyl Ketone, Ethyl Benzoate, Ethyl Butyrate, Ethyl Hexyl Ketone, Ethyl Phenyl Acetate, Eucalyptol, Eugenol, Fenchyl Acetate, Flor Acetate (tricyclo Decenyl Acetate), Frutene (tricyclco Decenyl Propionate), Geraniol, Hexenol, Hexenyl Acetate, Hexyl Acetate, Hexyl Formate, Hydratropic Alcohol, Hydroxycitronellal, Indone, Isoamyl Alcohol, Iso Menthone, Isopulegyl Acetate, Isoquinolone, Ligustral, Linalool, Linalool Oxide, Linalyl Formate, Menthone, Menthyl Acetphenone, Methyl Amyl Ketone, Methyl Anthranilate, Methyl Benzoate, Methyl Benyl Acetate, Methyl Eugenol, Methyl Heptenone, Methyl Heptine Carbonate, Methyl Heptyl Ketone, Methyl Hexyl Ketone, Methyl Phenyl Carbinyl Acetate, Methyl Salicylate, Methyl-N-Methyl Anthranilate, Nerol, Octalactone, Octyl Alcohol, p-Cresol, p-Cresol Methyl Ether, p-Methoxy Acetophenone, p-Methyl Acetophenone, Phenoxy Ethanol, Phenyl Acetaldehyde, Phenyl Ethyl Acetate, Phenyl Ethyl Alcohol, Phenyl Ethyl Dimethyl Carbinol, Prenyl Acetate, Propyl Bornate, Pulegone, Rose Oxide, Safrole, 4-Terpinenol, Alpha-Terpinenol, and/or Viridine.

[0036] Preferred non-encapsulated perfume ingredients are those hydrophobic perfume components with a ClogP above 3. As used herein, the term "ClogP" means the logarithm to base 10 of the octanol/water partition coefficient (P). The octanol/water partition coefficient of a PRM is the ratio between its equilibrium concentrations in octanol and water. Given that this measure is a ratio of the equilibrium concentration of a PRM in a non-polar solvent (octanol) with its concentration in a polar solvent (water), ClogP is also a measure of the hydrophobicity of a material--the higher the ClogP value, the more hydrophobic the material. ClogP values can be readily calculated from a program called "CLOGP" which is available from Daylight Chemical Information Systems Inc., Irvine Calif., USA. Octanol/water partition coefficients are described in more detail in U.S. Pat. No. 5,578,563.

[0037] Perfume components with a ClogP above 3 comprise: Iso E super, citronellol, Ethyl cinnamate, Bangalol, 2,4,6-Trimethylbenzaldehyde, Hexyl cinnamic aldehyde, 2,6-Dimethyl-2-heptanol, Diisobutylcarbinol, Ethyl salicylate, Phenethyl isobutyrate, Ethyl hexyl ketone, Propyl amyl ketone, Dibutyl ketone, Heptyl methyl ketone, 4,5-Dihydrotoluene, Caprylic aldehyde, Citral, Geranial, Isopropyl benzoate, Cyclohexanepropionic acid, Campholene aldehyde, Caprylic acid, Caprylic alcohol, Cuminaldehyde, 1-Ethyl-4-nitrobenzene, Heptyl formate, 4-Isopropylphenol, 2-Isopropylphenol, 3-Isopropylphenol, Allyl disulfide, 4-Methyl-1-phenyl-2-pentanone, 2-Propylfuran, Allyl caproate, Styrene, Isoeugenyl methyl ether, Indonaphthene, Diethyl suberate, L-Menthone, Menthone racemic, p-Cresyl isobutyrate, Butyl butyrate, Ethyl hexanoate, Propyl valerate, n-Pentyl propanoate, Hexyl acetate, Methyl heptanoate, trans-3,3,5-Trimethylcyclohexanol, 3,3,5-Trimethylcyclohexanol, Ethyl p-anisate, 2-Ethyl-1-hexanol, Benzyl isobutyrate, 2,5-Dimethylthiophene, Isobutyl 2-butenoate, Caprylnitrile, gamma-Nonalactone, Nerol, trans-Geraniol, 1-Vinylheptanol, Eucalyptol, 4-Terpinenol, Dihydrocarveol, Ethyl 2-methoxybenzoate, Ethyl cyclohexanecarboxylate, 2-Ethylhexanal, Ethyl amyl carbinol, 2-Octa-

nol, 2-Octanol, Ethyl methylphenylglycidate, Diisobutyl ketone, Coumarone, Propyl isovalerate, Isobutyl butanoate, Isopentyl propanoate, 2-Ethylbutyl acetate, 6-Methyl-tetrahydroquinoline, Eugenyl methyl ether, Ethyl dihydrocinnamate, 3,5-Dimethoxytoluene, Toluene, Ethyl benzoate, n-Butyrophenone, alpha-Terpineol, Methyl 2-methylbenzoate, Methyl 4-methylbenzoate, Methyl 3, methylbenzoate, sec.Butyl n-butyrate, 1,4-Cineole, Fenchyl alcohol, Pinanol, cis-2-Pinanol, 2,4, Dimethylacetophenone, Isoeugenol, Safrole, Methyl 2-octynoate, o-Methylanisole, p-Cresyl methyl ether, Ethyl anthranilate, Linalool, Phenyl butyrate, Ethylene glycol dibutyrate, Diethyl phthalate, Phenyl mercaptan, Cumic alcohol, m-Toluquinoline, 6-Methylquinoline, Lepidine, 2-Ethylbenzaldehyde, 4-Ethylbenzaldehyde, o-Ethylphenol, p-Ethylphenol, m-Ethylphenol, (+)-Pulegone, 2,4-Dimethylbenzaldehyde, Isoxylaldehyde, Ethyl sorbate, Benzyl propionate, 1,3-Dimethylbutyl acetate, Isobutyl isobutanoate, 2,6-Xylenol, 2,4-Xylenol, 2,5-Xylenol, 3,5-Xylenol, Methyl cinnamate, Hexyl methyl ether, Benzyl ethyl ether, Methyl salicylate, Butyl propyl ketone, Ethyl amyl ketone, Hexyl methyl ketone, 2,3-Xylenol, 3,4, Xylenol, Cyclopentadenanolide and Phenyl ethyl 2 phenylacetate 2.

[0038] It is commonplace for a plurality of perfume components to be present in a formulation. In the compositions of the present invention it is envisaged that there will be four or more, preferably five or more, more preferably six or more or even seven or more different perfume components from the list given of delayed blooming perfumes given above and/or the list of perfume components with a ClogP above 3 present in the perfume.

[0039] Another group of perfumes with which the present invention can be applied are the so-called 'aromatherapy' materials. These include many components also used in perfumery, including components of essential oils such as Clary Sage, Eucalyptus, Geranium, Lavender, Mace Extract, Neroli, Nutmeg, Spearmint, Sweet Violet Leaf and Valerian.

Product Form and Method of Treatment

[0040] The compositions of the invention are suitable for domestic use. In the context of this invention, by domestic use is meant use in the home, in launderettes, etc on finished textiles and does not extend to use during the textile manufacturing process. The composition may be a laundry composition or a fabric treatment composition. For example, the composition may be a fabric softening composition, a detergent composition or a softening in the wash composition.

[0041] The method of treatment involves contacting the substrate (fabric) with the composition of the invention.

[0042] The treatment of the substrate with the composition of the invention can be made by direct application such as spraying, rubbing, spotting, smearing, etc, preferably spraying.

[0043] The amount of superabsorbent particles used in the method of treatment is suitably from 0.1 to 15 wt %, by weight of the fabric. Where the fabric is cotton, the method involves using the superabsorbent polymer particles in an amount of from 5 to 15 wt % by weight of the fabric. Where the fabric is a synthetic fabric, preferably polyester, the method involves using the superabsorbent polymer particles in an amount of from 0.1 to 10 wt % by weight of the fabric.

[0044] The treatment may be provided as a spray composition e.g., for domestic (or industrial) application to fabric, for example in a treatment separate from a conventional domestic laundering process. Suitable spray dispensing devices are disclosed in WO 96/15310 (Procter & Gamble).

[0045] The compositions of the invention are in liquid form. The composition may be a concentrate to be diluted in a non-aqueous solvent before use. The composition may also be a ready-to-use (in-use) composition. Preferably the composition is provided as a ready to use liquid.

Further Optional Ingredients

[0046] The compositions of the invention may contain one or more other ingredients. Such ingredients include dyes, colourants, preservatives (e.g. bactericides), pH buffering agents, perfume carriers, hydrotropes, polyelectrolytes, anti-shrinking agents, anti-wrinkle agents, anti-oxidants, anti-corrosion agents, drape imparting agents, anti-static agents, ironing aids, pearlisers and/or opacifiers.

Method of Manufacture

[0047] In a typical method of manufacture, the superabsorbent capsules are added to a solvent. Perfume and other optional adjuncts may be pre- or post-dosed, or added simultaneously.

[0048] The superabsorbent capsules and compositions containing them are useful to increase the moisture absorption of fabric and thus reduce the wet feel caused, for example, by sweating. The superabsorbent particles of the invention are used to improve the in-wear comfort of fabric. The particles are particularly useful in the treatment of synthetic fabric, preferably polyester.

Examples

[0049] Embodiments of the invention are now illustrated with reference to the following non-limiting examples. Unless

stated otherwise, all proportions are given in weight percent, by weight of the total composition.

Example 1 - Treatment of Polyester and cotton with Compositions 1-3 and Control A

[0050] Sofcare S-SP was applied to two types of fabric (100 % Knitted Polyester & 100 % Knitted Cotton). Three different concentrations of Sofcare S-SP were applied. A control composition, containing pentane only were also applied to polyester and cotton samples. A pad mangle was used to apply the compositions (Vertical laboratory padder VFM type ex. Werner Mathis AG). Fabric samples were pad applied to 100% pick-up. The fabric samples were then dried in air.

Composition	Sofcare S-SP[1] (wt % by weight of fabric)
1	0.1
2	1.0
3	10.0
A[2]	0
1 - Sofcare S-SP, ex Kao, 0.166 % active dispersion in pentane A - Control composition	

Example 2 - Moisture absorption properties of Polyester and cotton treated with Sofcare S-SP

[0051] The effect on Sofcare S-SP on moisture absorption of fabrics was assessed as follows.

[0052] Moisture absorption was determined using Dynamic Vapour Sorption (DVS) measurements made on a DVS1 (Surface Measurement Systems Limited, UK). The sample weight was measured as a function of humidity, giving a water sorption isotherm.

[0053] The sorption isotherms shown below were obtained by taking measurements at several intervals between 0 to 95 % RH (relative humidity) and 95 to 0 % RH. A measurement was made by holding the textile at a set RH until no further weight change was observed.

[0054] All measurements were made at 25°C.

[0055] The results are shown in Figure 1 (for cotton) and Figure 2 (for polyester).

[0056] It will be seen from Figure 1 and Figure 2 that the use of the superabsorbent particles in accordance with the invention leads to significant increase in the amount of moisture absorbed by the fabrics.

[0057] In particular, it will be seen that 1% Sofcare S-SP on polyester significantly increases the amount of moisture that can be absorbed, i.e. 8.8 % absorption compared with 0.6 % for untreated polyester. A 10 % loading of Sofcare S-SP on polyester gives a greater absorbency than untreated cotton, i.e. 19.6 % compared with 13.5 %.

Claims

1. Use of a superabsorbent particle, comprising a superabsorbent polymeric core and a hydrophobic porous shell in the domestic treatment of fabric, wherein the shell comprises silicone.

2. Use as claimed in claimed 1, to improve the in-wear comfort of fabric.

3. Use as claimed in claim 1 or claim 2 to increase the moisture absorption of fabric.

4. Use as claimed in any preceding claim to reduce the wet feel of fabric.

5. Use as claimed in any preceding claim, wherein the fabric is synthetic.

6. Use as claimed in claim 5, wherein the fabric is polyester.

7. A non-aqueous fabric treatment composition for domestic use, comprising superabsorbent particles and a solvent, wherein the superabsorbent particles comprise a superabsorbent polymeric core and a porous shell, and wherein the shell comprises silicone.

8. A composition as claimed in claim 7, wherein the silicone is an amidomethicone.

9. A composition as claimed in claim 7 or claim 8, wherein the superabsorbent particles are present in an amount of from 4 to 11 wt %.

10. A composition as claimed in any one of claims 7 to 9, which further comprises a perfume.

11. A composition as claimed in claim 10, wherein the perfume is present in an amount of from 0.01 to 10 % by weight of the total composition.

12. A composition as claimed in one of claims 7 to 11, wherein the solvent is a siloxane.

13. Use of a composition as defined in any one of claims 7 to 12 to increase the moisture absorption of fabric.

14. Use of a composition as defined in any one of claims 7 to 12 to improve the in-wear comfort of fabric.

15. Use as claimed in claim 14 to reduce the wet feel of fabric.

16. Use as claimed in any one of claims 13 to 15, wherein the fabric is synthetic, preferably polyester.

17. A method of treating fabric, comprising contacting fabric with a composition as defined in any one of claims 7 to 12.

18. A method as claimed in claim 17, wherein the fabric is cotton.

19. A method as claimed in claim 17, wherein the fabric is a synthetic fabric, preferably polyester.

20. A method as claimed in claim 18, wherein the superabsorbent polymer particles are used in an amount of from 0.1 to 15 wt % by weight of the fabric.

21. A method as claimed in claim 19, wherein the superabsorbent polymer particles are used in an amount of from 5 to 15 wt % by weight of the fabric.

22. A method as claimed in claim 20, wherein the superabsorbent polymer particles are used in an amount of from 0.1 to 10 wt % by weight of the fabric.

23. A method as claimed in any one of claims 18 to 22, wherein the composition is delivered in the form of a spray.

Patentansprüche

1. Verwendung eines superabsorbierenden Partikels, das einen superabsorbierenden Polymerkern und einen hydrophoben porösen Mantel umfasst, bei der häuslichen Behandlung von Gewebe, wobei der Mantel Silikon umfasst.

2. Verwendung, wie sie in Anspruch 1 beansprucht ist, zur Verbesserung des Tragekomforts von Gewebe.

3. Verwendung, wie sie in Anspruch 1 oder Anspruch 2 beansprucht ist, zur Erhöhung der Feuchtigkeitsabsorption von Gewebe.

4. Verwendung, wie sie in einem vorangehenden Anspruch beansprucht ist, zur Verringerung des feuchten Anfühlens von Gewebe.

5. Verwendung, wie sie in einem vorangehenden Anspruch beansprucht ist, wobei das Gewebe synthetisch ist.

6. Verwendung, wie sie in Anspruch 5 beansprucht ist, wobei das Gewebe Polyester ist.

7. Nicht-wässrige Gewebebehandlungszusammensetzung zur häuslichen Verwendung, die superabsorbierende Partikel und ein Lösungsmittel umfasst, wobei die superabsorbierenden Partikel einen superabsorbierenden Polymerkern und einen porösen Mantel umfassen, und wobei der Mantel Silikon umfasst.

8. Zusammensetzung, wie sie in Anspruch 7 beansprucht ist, wobei das Silikon ein Amidomethicon ist.

9. Zusammensetzung, wie sie in Anspruch 7 oder Anspruch 8 beansprucht ist, wobei die superabsorbierenden Partikel in einer Menge von 4 bis 11 Gew.-% vorliegen.

10. Zusammensetzung, wie sie in einem der Ansprüche 7 bis 9 beansprucht ist, die außerdem ein Parfüm umfasst.

11. Zusammensetzung, wie sie in Anspruch 10 beansprucht ist, wobei das Parfüm in einer Menge von 0,01 bis 10 Gew.-% der gesamten Zusammensetzung vorliegt.

12. Zusammensetzung, wie sie in einem der Ansprüche 7 bis 11 beansprucht ist, wobei das Lösungsmittel ein Siloxan ist.

13. Verwendung einer Zusammensetzung, wie sie in einem der Ansprüche 7 bis 12 definiert ist, zur Erhöhung der Feuchtigkeitsabsorption von Gewebe.

14. Verwendung einer Zusammensetzung, wie sie in einem der Ansprüche 7 bis 12 definiert ist, zur Verbesserung des Tragekomforts von Gewebe.

15. Verwendung, wie sie in Anspruch 14 beansprucht ist, zur Reduzierung des feuchten Anfühlens von Gewebe.

16. Verwendung, wie sie in einem der Ansprüche 13 bis 15 beansprucht ist, wobei das Gewebe synthetisch, vorzugsweise Polyester, ist.

17. Verfahren zur Behandlung von Gewebe, das In-Kontakt-Bringen von Gewebe mit einer Zusammensetzung, wie sie in einem der Ansprüche 7 bis 12 definiert ist, umfasst.

18. Verfahren, wie es in Anspruch 17 beansprucht ist, wobei das Gewebe Baumwolle ist.

19. Verfahren, wie es in Anspruch 17 beansprucht ist, wobei das Gewebe ein synthetisches Gewebe, vorzugsweise Polyester, ist.

20. Verfahren, wie es in Anspruch 18 beansprucht ist, wobei die superabsorbierenden Polymerpartikel in einer Menge von 0,1 bis 15 Gew.-% des Gewebes verwendet werden.

21. Verfahren, wie es in Anspruch 19 beansprucht ist, wobei die superabsorbierenden Polymerpartikel in einer Menge von 5 bis 15 Gew.-% des Gewebes verwendet werden.

22. Verfahren, wie es in Anspruch 20 beansprucht ist, wobei die superabsorbierenden Polymerpartikel in einer Menge von 0,1 bis 10 Gew.-% des Gewebes verwendet werden.

23. Verfahren, wie es in einem der Ansprüche 18 bis 22 beansprucht ist, wobei die Zusammensetzung in der Form eines Sprays abgegeben wird.

Revendications

1. Utilisation d'une particule superabsorbante, comprenant un noyau polymère superabsorbant et une enveloppe poreuse hydrophobe pour le traitement ménager d'un tissu, l'enveloppe comprenant du silicone.

2. Utilisation selon la revendication 1, pour améliorer le confort du tissu lorsqu'il est porté.

3. Utilisation selon la revendication 1 ou la revendication 2 pour augmenter l'absorption d'humidité du tissu.

4. Utilisation selon l'une quelconque des revendications précédentes pour réduire la sensation humide du tissu.

5. Utilisation selon l'une quelconque des revendications précédentes, le tissu étant synthétique.

6. Utilisation selon la revendication 5, le tissu étant du polyester.

7. Composition non aqueuse de traitement de tissu pour une utilisation domestique, comprenant des particules supe-

rabsorbantes et un solvant, les particules superabsorbantes comprenant un noyau polymère superabsorbant et une enveloppe poreuse, et l'enveloppe comprenant du silicone.

8. Composition selon la revendication 7, le silicone étant de l'amodiméthicone.

9. Composition selon la revendication 7 ou 8, les particules superabsorbantes étant présentes à raison de 4 à 11 % en poids.

10. Composition selon l'une quelconque des revendications 7 à 9, qui comprend en outre un parfum.

11. Composition selon la revendication 10, le parfum étant présent à raison de 0,01 à 10 % en poids de la composition totale.

12. Composition selon l'une quelconque des revendications 7 à 11, le solvant étant un siloxane.

13. Utilisation d'une composition selon l'une quelconque des revendications 7 à 12 pour augmenter l'absorption d'humidité d'un tissu.

14. Utilisation d'une composition selon l'une quelconque des revendications 7 à 12 pour améliorer le confort du tissu lorsqu'il est porté.

15. Utilisation selon la revendication 14 pour réduire la sensation humide du tissu.

16. Utilisation selon l'une quelconque des revendications 13 à 15, le tissu étant synthétique, de préférence du polyester.

17. Procédé de traitement d'un tissu, comprenant la mise en contact du tissu avec une composition selon l'une quelconque des revendications 7 à 12.

18. Procédé selon la revendication 17, le tissu étant du coton.

19. Procédé selon la revendication 17, le tissu étant un tissu synthétique, de préférence du polyester.

20. Procédé selon la revendication 18, les particules de polymère superabsorbantes étant utilisées à raison de 0,1 à 15 % en poids du tissu.

21. Procédé selon la revendication 19, les particules de polymère superabsorbantes étant utilisées à raison de 5 à 15 % en poids du tissu.

22. Procédé selon la revendication 20, les particules de polymère superabsorbantes étant utilisées à raison de 0,1 à 10 % en poids du tissu.

23. Procédé selon l'une quelconque des revendications 18 à 22, la composition étant distribuée sous forme de pulvérisation.

Fig. 1.

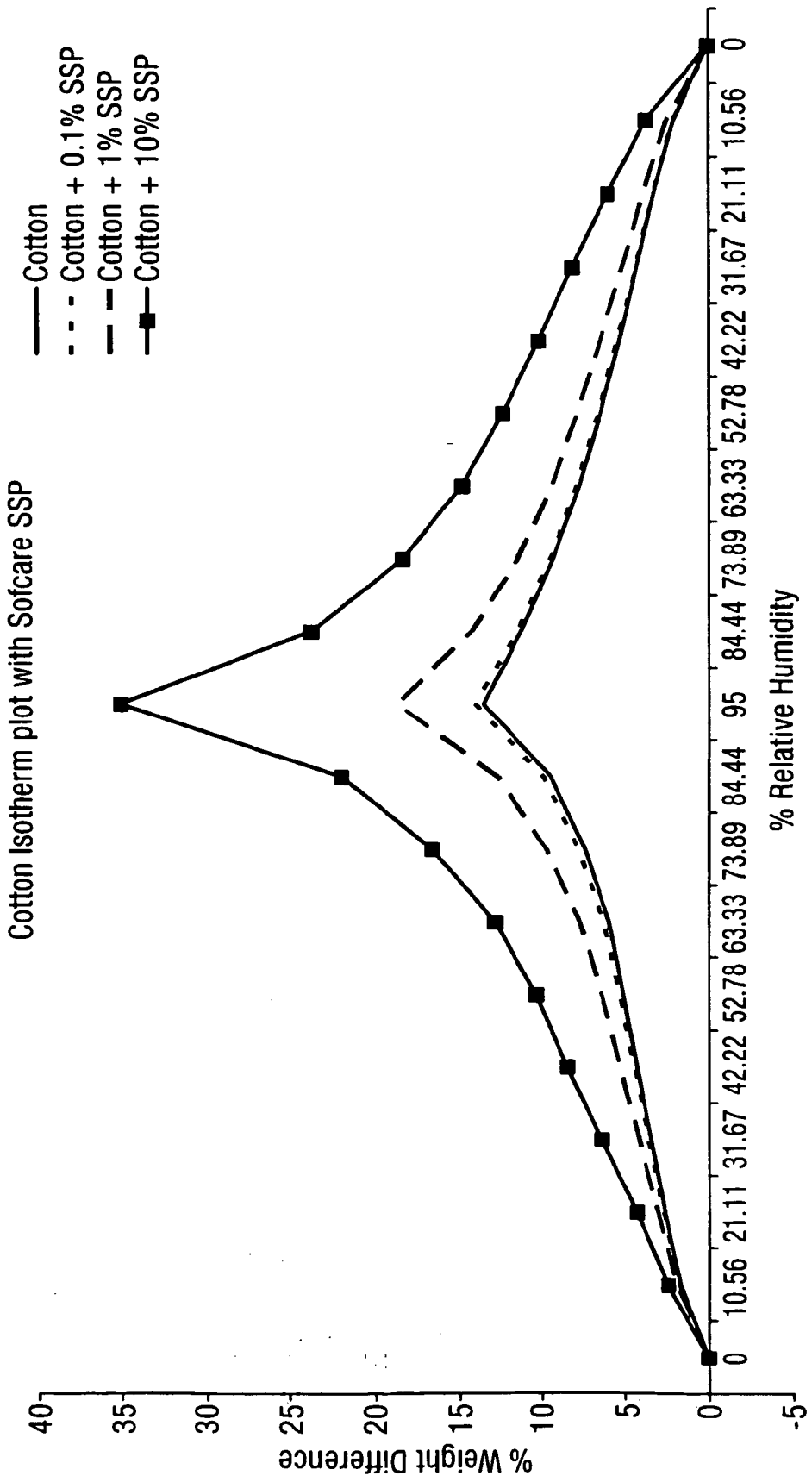
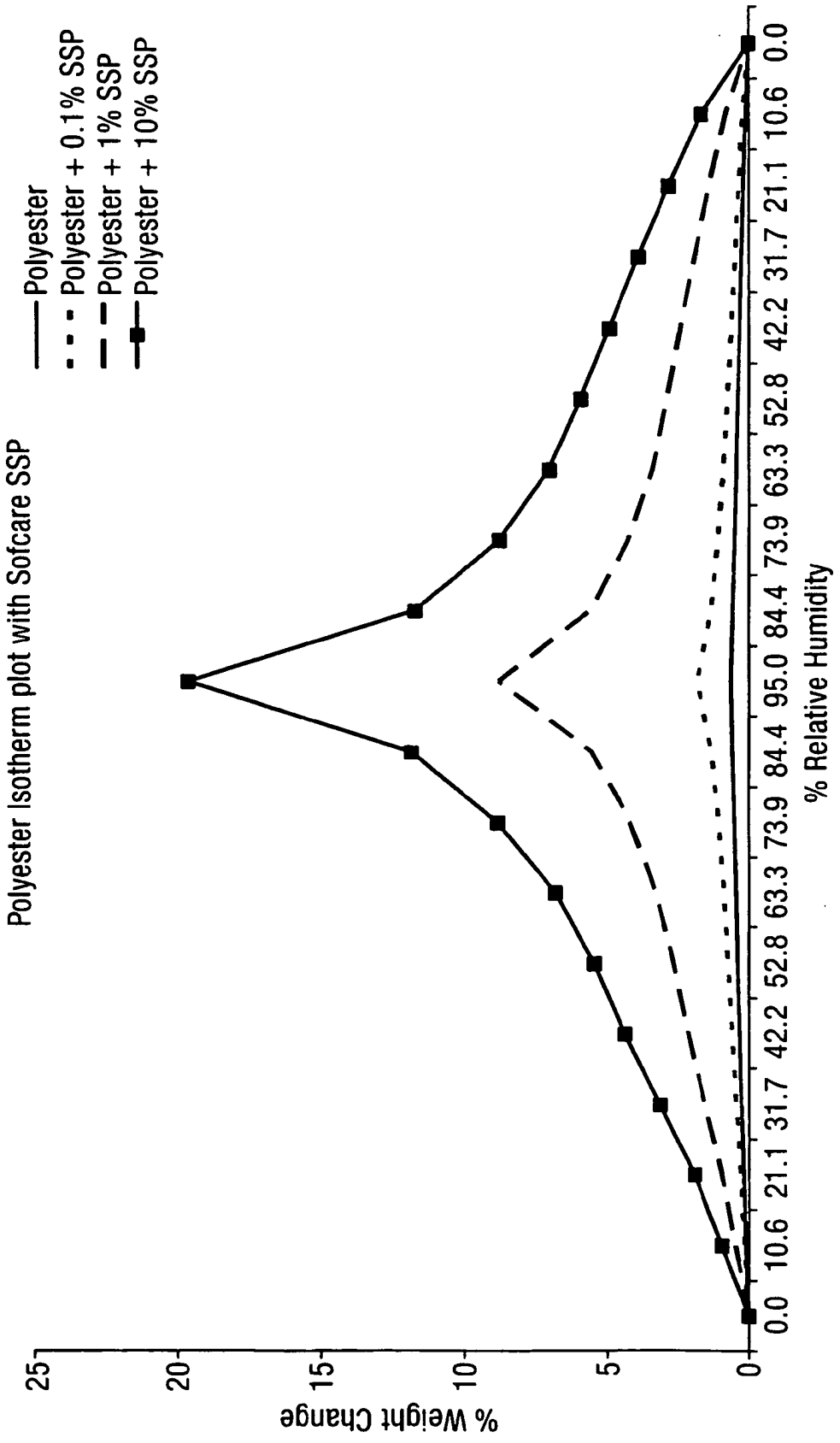

Cotton Isotherm plot with Sofcare SSP
Cotton
Cotton + 0.1% SSP
Cotton + 1% SSP
Cotton + 10% SSP
% Weight Difference
40
35
30
25
20
15
10
5
0
-5
0
10.56
21.11
31.67
42.22
52.78
63.33
73.89
84.44
95
84.44
73.89
63.33
52.78
42.22
31.67
21.11
10.56
0
% Relative Humidity

Fig.2.


Polyester Isotherm plot with Sofcare SSP
Polyester
Polyester + 0.1% SSP
Polyester + 1% SSP
Polyester + 10% SSP
% Weight Change
25
20
15
10
5
0
0.0 10.6 21.1 31.7 42.2 52.8 63.3 73.9 84.4 95.0 84.4 73.9 63.3 52.8 42.2 31.7 21.1 10.6 0.0
% Relative Humidity

REFERENCES CITED IN THE DESCRIPTION

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