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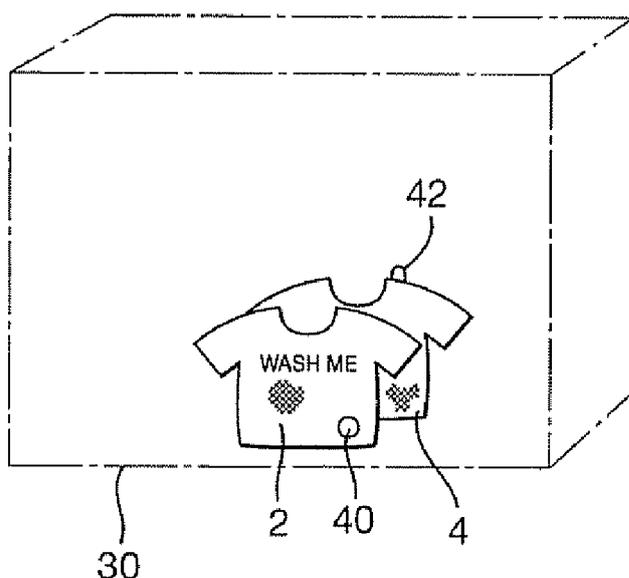
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(54) Title: FABRIC WHITENESS MEASUREMENT SYSTEM

Fig.2.



(57) Abstract: A whiteness measurement system comprising an outer package containing a detergent composition comprising an shading agent for improving, maintaining or rejuvenating whiteness, and at least one pair of corresponding fabric whiteness guides, the or each pair comprising a first fabric whiteness guide to be washed and a second fabric whiteness guide to be dry-stored, wherein the guides comprise corresponding white fabric. Preferred laundry compositions comprising shading agents for improving, maintaining or rejuvenating white fabrics.

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Fabric Whiteness Measurement system.

The present invention concerns a whiteness guide for monitoring whiteness of a fabric.

5

Fabric whiteness is often extremely valuable to consumers. Indeed, for some garments (e.g. expensive whitenessed suit shirts, uniforms) a high whiteness level is necessary so that any reduction is perceived as unacceptable. Many white garments yellow over multiple wash wear cycles. In order to maintain the white appearance shading dyes may be used.

10

SUMMARY OF INVENTION

An objective is to provide a highly accurate device and method for in-home consumer monitoring of the changes in fabric whiteness and evaluation of the benefits of a laundry composition.

15

Accordingly, in a first aspect, the present invention provides a whiteness measurement system comprising an outer package containing a detergent composition comprising an shading agent for improving, maintaining or rejuvenating whiteness, and at least one pair of corresponding fabric whiteness guides, the or each pair comprising a first fabric whiteness guide to be washed and a second fabric whiteness guide to be dry-stored, wherein the guides comprise corresponding white fabric.

20
25

The provision of a whiteness guide together with the washing powder enables the consumer to effectively monitor the effectiveness of the laundry formulation after a single wash within a detergent formulation.

30

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The invention allows the consumer to measure the effectiveness of different brands or variants or to compare washing conditions. The monitoring is effected simply by adding the first whiteness guide to a laundry load, whilst storing the second whiteness guide and then comparing the two guides after the wash has
5 completed. The guides are simple to use, portable and realistic to the washing situation, the substrate is a washable fabric rather than printed card or plastic, and so colour comparison is more realistic.

In a second aspect, the invention provides a method of consumer measurement of
10 fabric whiteness using the system of the first aspect following a washing operation involving the shading agent, the method using the fabric whiteness guide of the first aspect and including the steps of:

- (a) washing the first whiteness guide with a laundry composition,
- (b) dry storing the second whiteness guide, followed by the step of
15 (b) comparing the whiteness of the washed first whiteness guide with that of the second whiteness guide to ascertain whether the washed first whiteness guide shows an improved whiteness as compared with the second whiteness guide.

The terms "dry storing" and "dry-stored" as used herein, means storing in any
20 suitable place but not washing or wetting. Preferably storage takes place out of sunlight, more preferably out of direct sunlight.

In a third aspect, the invention provides a package containing a laundry composition in combination with a fabric whiteness measurement of the first
25 aspect of the invention and preferably together with instructions for use of said fabric whiteness measurement system according to the method of the second aspect.

The laundry composition preferably contains an agent for improving rejuvenating
30 or maintaining whiteness. The agent may comprise one or more dyes or pigments for increasing perceived whiteness. Preferably the agent or agents together,

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has/have a peak absorption wavelength on the substrate fabric of 540 nm to 650 nm, and further preferably from 570 nm to 630 nm.

5 Preferably no build-up shading agents are used as these improve perceived whiteness, but do not build up over successive washes, but provide a single wash benefit. However human whiteness memory is generally poor so it is not often possible to visualise the whiteness of a fabric pre-wash. Also the sceptical consumer may not believe that such improvement can be obtained after only one wash. Only by direct side by side comparison with the pre-wash whiteness level,
10 would such improvement be proven to the sceptical consumer.

No build up dyes or pigments may be selected from acid, basic, hydrolysed reactive, aminonaphthol or thiazolium dyes.

15 Suitable acid dyes for the current application may comprise the chromophore types e.g. azo, anthraquinone, triarylmethane, methine quinophthalone, azine, oxazine, thiazine.

Acid dyes may comprise Acid Blue 98, Acid Violet 17, Acid Black 1, Acid Red 51,
20 Acid Red 17 Acid Blue 29, Acid Blue 98 and Acid Violet 50

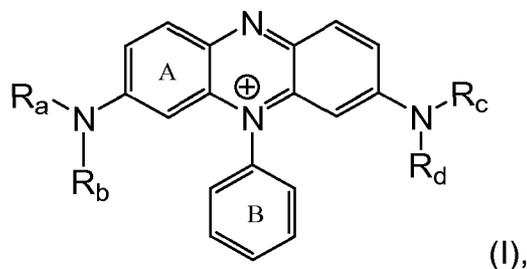
Acid azine dyes are preferred as whilst depositing well on cotton substrates deposit poorly on nylon so they do not lead to over shading of nylon fabrics, and are capable of providing a true blue shade to the cotton substrate.
25

More preferably the shading agent in the laundry composition, comprises:

(i) from 0.0001 to 0.1 wt% of an azine dye, wherein the dye is of the following core structure:

30

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wherein R_a , R_b , R_c and R_d are selected from: H, a branched or linear C1 to C7-alkyl chain, benzyl, a phenyl, and a naphthyl;

5 the dye is substituted with at least one SO_3^- or $-COO^-$ group;

the B ring does not carry a negatively charged group or salt thereof;

and the A ring may further substituted to form a naphthyl;

the dye is optionally substituted by groups selected from: amine, methyl, ethyl, hydroxyl, methoxy, ethoxy, phenoxy, Cl, Br, I, F, and NO_2 .

10

Preferably the shading agent is used in a washing operation conducted where the aqueous solution is 10 to 30 °C. This aids deposition of the azine dye.

Preferably the aqueous solution contains from 0.3 to 2.5g/L surfactant.

15

The pH of the aqueous solution, provided by a unit dose of the laundry treatment composition is in the range from 2 to 12. Preferably the pH of the aqueous solution is in the range from 7 to 11.

20 Preferably the azine dye is present from 10 ppb to 200 ppb of the dye. It is within the scope of the invention to have a mixture of a direct dye, hydrophobic dyes and azine dye.

Preferably the hydrophobic dye is present in the range 10 ppb to 200 ppb.

25

Preferably the direct dye is present in the range from 2 ppb to 40 ppb.

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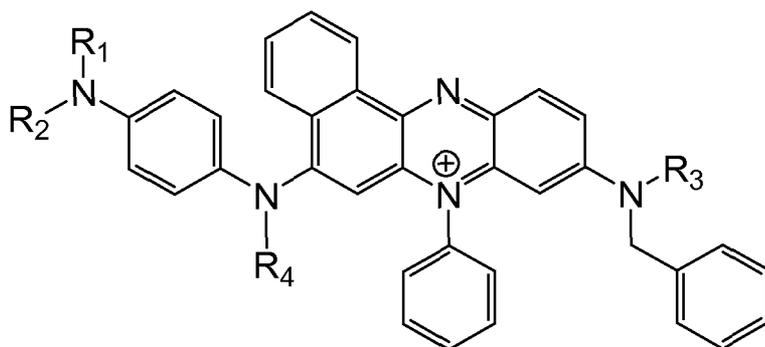
Preferably the aqueous solution has an ionic strength of greater than 0.01, more preferably greater than 0.05.

With respect to the azine dye of core structure (I) it is preferred that the A ring is further substituted to form a naphthyl. The dye is preferably substituted by two SO_3^- group and no other charged substituents. One skilled in the art will appreciate that the metal cation that is exemplified as sodium may be easily varied and such is within the scope of the invention, for example, such as alkali earth metals and alkaline earth metals and these are preferred, in particular potassium and calcium.

One skilled in the art will appreciate that apart from the requirement that the azine dye is substituted with at least one SO_3^- or $-\text{COO}^-$ group and that the B ring does not carry a negatively charged group or salt thereof the latitude to vary substituents is large without effecting the efficacy of the dye to deposit on cotton as required. The groups R_a , R_b , R_c and R_d as specified above may carry other substituents.

With respect to the B ring not carrying a negatively charged group B this in particular a SO_3^- or COO^- .

Preferably the dye has the following structure:



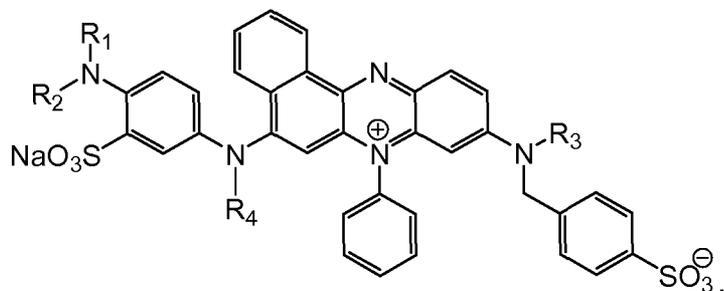
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wherein R_1 , R_2 , R_3 and R_4 is selected from the group consisting of: H, Me, Et, *n*-Pr and *i*-Pr; and the dye is optionally substituted by a methoxy group.

A preferred dye is of the following structure:

5



Preferred azine dyes are: acid blue 98, acid violet 50, and acid blue 59, more preferably acid violet 50 and acid blue 98.

10

The azine dye is present in the formulation at levels of 0.00001 to 0.1%, preferably 0.0001 to 0.01%, most preferably 0.0005 to 0.005%.

15

In a preferred embodiment of the invention, the main wash formulation contains further shading dyes selected from hydrophobic dyes, most preferably solvent violet 13 or disperse violet 27. These dyes give benefits to synthetic fibres such as elastane and polyester. The hydrophobic dyes are preferably blue or violet.

20

The hydrophobic dyes are preferably present at levels of 0.0001 to 0.1% preferably 0.0005 to 0.005 wt%.

In a preferred embodiment of the invention, the main wash formulation contains further shading dyes selected from direct violet and direct blue dyes.

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In this embodiment the acid dye provides a shading in the first few washes that is visual and pleasing. The effect of the direct dye only becomes visible after multiple washes and serves to counteract the long term yellowing.

In this way, both rejuvenation and whiteness maintenance may be provided to the
5 consumer.

Azine dyes have advantage over triphenylmethane dyes in that they are more stable to high pH.

10 Exemplary basic dyes comprise triarylmethane blue and violet basic dyes, methine blue and violet basic dyes, anthraquinone blue and violet basic dyes, azo dyes, oxazine dyes and xanthene dye Basic Violet 10 and mixtures thereof

Azo dyes may be used such as Basic Blue 16, Basic Blue 65, Basic Blue 66,
15 Basic Blue 67, Basic Blue 71, Basic Blue 159, Basic Violet 19, Basic Violet 35, Basic Violet 38, Basic Violet 48

Oxazine Dyes may be used, such as Basic Blue 3, Basic Blue 75, Basic Blue 95,
Basic Blue 122, Basic Blue 124, Basic Blue 141, Nile Blue A

20

Triarylmethane Blue and Violet Basic dyes: Basic Blue 1, Basic Blue 5, Basic Blue 7, Basic Blue 8, Basic Blue 11, Basic Blue 15, Basic Blue 18, Basic Blue 20, Basic Blue 23, Basic Blue 26, Basic Blue 55, Basic Blue 81, Basic Violet 1, Basic Violet 2, Basic Violet 3, Basic Violet 4, Basic Violet 14, Basic Violet 23

25

Methine Blue and Violet Basic Dyes may be use such as:
Basic Violet 7, Basic Violet 16, Basic Violet 21.

Anthraquinone Dyes may be used such as Basic Blue 21, Basic Blue 22, Basic
30 Blue 47, Basic Blue 35, Basic Blue 80.

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The shading dye may comprise a photobleach covalently linked to another blue or violet chromophore.

5 The shading dye may comprise a reactive dye covalently linked to a polymer or a solid particle.

The laundry composition may also contain a non hueing dye which enables colouration of the product.

10 The shading dye may comprise a dye adsorbed onto a solid particle, such as a clay.

The laundry composition may contain predominately anionic surfactants. In this case dyes containing acid groups are preferred. For use in products which
15 contain predominantly cationic surfactants, dyes containing basic groups are preferred. This is to prevent precipitation between the dye and surfactant.

Suitable dyes for use in products containing predominately anionic surfactants include those listed in the Colour Index as Direct Violet Dyes Direct Blue dyes,
20 Acid Blue and Acid Violet dyes.

Dyes which may be metabolised to carcinogenic amines should not be used. For example dyes which when reduced release benzidine, 3,3'-dimethoxybenzidine, 3,3'-dimethoxybenzidine or 3,3'-dichlorobenzidine should not be used.
25

The dyes are preferably added to granular products via the surfactant slurry or via post-dosed granules.

If more than one dye is used then for a powder formulation it is preferred that the
30 shading dyes are co-granulated.

All dye levels refer to pure dye.

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The laundry composition may contain predominately cationic surfactants. Suitable dyes here include those listed in the Colour Index as Basic Blue and Basic Violet Dyes.

- 5 The level of dye in the laundry composition may be in the range from 0.000001 wt % to 0.01 wt % preferably in the range from 0.0001 to 0.01, and preferably 0.0002 to 0.005 wt%.

10 The step of comparing may take place after other events which affect washing, for instance drying of washed fabrics in a tumble dryer, outside, in sunlight or in shade.

15 Preferably both guides have (before use) substantially common whiteness and preferably texture and further preferably the guides have (before use) identical whiteness and/or texture. The guides may comprise white portions along with coloured portions. The white portions preferably comprise 50% or more, and more preferably 75% or more of the total area of the guides.

20 Preferably both guides are of a common material, and/or shape and/or size for ease of comparison.

Most preferably the guides are (before use) identically visually.

25 The guides may be two parts of a common piece of fabric so that the first guide is dipped into a washing receptacle and washed, whilst the second guide simply hangs over the edge of the receptacle and remains unwashed.

30 Advantageously, first and second guides of one pair comprise identical fabrics. The fabric preferably comprises a fibre based on cellulosics, polyester, nylon elastane, acrylic, cotton. Most preferably it comprises cellulosic cotton and polyester.

- 10 -

Preferably the fabric has a woven construction. Woven fabrics are classified as to weave or structure according to the manner in which warp and weft cross each other. The three fundamental weaves, of which others are variations, are the plain, twill, and satin. Further preferably the weave is plain and/or twill (as is used
5 for denim fabrics).

The fabric is preferably washable preferably can withstand temperatures of the wash up to 90 degrees and drying temperature up to 150 degrees.

10 The or each guide is shaped and/or sized to be visually distinct from remaining laundry items, so it can be easily picked out from the laundry load after washing. Accordingly it may be substantially smaller or may be a visually distinct shape. Visually interesting shapes such as those defined by a perimeter of undulating
15 curves distinguish the guide from remaining laundry items.

The preferred size of the or each guide is less than 30 cm (height and/or width). This size allows ease of inclusion in a wash load, prevents the guides becoming lost in the washing load but is small enough to allow ease of handling for
20 comparison.

The guides may be shaped to visually distinct from remaining laundry items; so the first guide can be easily picked out from the laundry load after washing and to enable easy dry-storage of the second guide. Accordingly they may be shaped to resemble known shapes: e.g. a horseshoe shape or iconic articles of clothing
25 such as the T-shirt or a pair of trousers, jeans, shirt, jacket etc. The guides could be flat or 3D and include single or multiple layers of substrate.

Where guides resemble clothing, preferably the waist line should be less than 15 cm and further preferably less than 10cm, any may be even less than 5 cm.

30

Preferably at least the first whiteness guide comprises one or more apertures. Such aperture or apertures may be defined by a strip of the guide so as to create a hook or loop. This offers the advantage of enabling the guide to be attached to a larger article which aids locating the guide at the end of the washing process.

5

The second whiteness guide may comprise a hook for ease of dry storage.

The whiteness may be defined in terms of $L^*a^*b^*$ values (the CIE LAB whiteness space, (CIE 1976 $L^* a^* b^*$), where L^* is the lightness value of the whiteness ($L^*=0$ yields black and $L^*=100$ yields white), a^* is the red-green value (negative values indicate green while positive values indicate red) and b^* is the yellow-blue value (negative values indicate blue and positive values indicate yellow).

L^*_{max} is in the range 70-100, preferably 85-99, more preferably 92-99.
15 a^*_{max} is in the range -5 to +5, preferably -2 to + 2, more preferably -1 to +1.
 b^*_{max} is in the range -10 to +10, preferably -2 to +8 and more preferably 0 to +5.

The guide may be constructed with a 3-dimensional section or sections. This can aid retrieval after the washing process has been completed. The 3-dimensional
20 section/s may be formed by an arrangement of sections or panels attached e.g. by stitching.

Preferably the guide is sufficiently flexible so it can flex to lie against a flexible substrate such as fabric. This has the advantage that the guide can be easily
25 flexed to conform to the shape of a garment to carry out the whiteness comparison.

The whiteness guide may be provided with the packaging, unattached and loose inside. This has the advantage that the guide is quickly obtained on opening the
30 package. The or each whiteness guide may be wrapped in packaging to protect it from the washing composition, so that when it is initially retrieved from the pack

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and used, it is not contaminated with the washing composition as this could interfere with whiteness measuring.

5 The guide may be perfumed, and the perfume of the guide may be the same as or correspond with the perfume of the laundry composition. Perfumed guides (either as provided in the package or after washing with a perfumed laundry composition) may be hung in wardrobes etc to fragrance stored fabrics or clothes.

10 Accordingly in a further aspect the invention provides use of one or more guides of the first aspect, as a fragrancing device to improve the fragrance of stored fabrics and/or articles. The use of a perfumed guide incorporating a hook or aperture to enable hanging up of the guide is especially advantageous in this regard.

15 For ease of incorporation into laundry products it is preferred if the shading dye is supplied in a liquid form.

The level of dye in the laundry composition may be in the range from 0.000001 wt % to 0.01 wt % preferably in the range from 0.0001 to 0.01 wt%.

20

The composition may comprise a fluorescent agent (optical brightener). Fluorescent agents are available commercially. The fluorescent agent may be supplied and used in the form of their alkali metal salts, for example, the sodium salts. The total amount of the fluorescent agent or agents used in the composition
25 may be generally from 0.005 to 2 wt %, preferably 0.01 to 0.1 wt %.

Preferred classes of fluorescer are: Di-styryl biphenyl compounds, e.g. Tinopal (Trade Mark) CBS-X, Di-amine stilbene di-sulphonic acid compounds, e.g. Tinopal DMS pure Xtra and Blankophor (Trade Mark) HRH, and Pyrazoline compounds,
30 e.g. Blankophor SN. Preferred fluorescers are: sodium 2 (4-styryl-3-sulfophenyl)-2H-naphthol[1,2-d]trazole, disodium 4,4'-bis[[4-anilino-6-(N methyl-N-2

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hydroxyethyl) amino 1,3,5-triazin-2-yl)]amino}stilbene-2-2' disulfonate, disodium 4,4'-bis{[(4-anilino-6-morpholino-1,3,5-triazin-2-yl)]amino} stilbene-2-2' disulfonate, and disodium 4,4'-bis(2-sulfoslyryl)biphenyl.

- 5 The laundry composition and whiteness guide may include a common shading dye or fluorescer, as described above.

The present invention relates to compositions which are used to treat laundry items such as clothes. Such compositions are preferably laundry detergent
10 compositions used for washing (especially particulate detergents, liquid detergents, laundry bars, pastes, gels or tablets), laundry fabric conditioners used for softening fabrics, pre-treatment products, post-treatment products, tumble dryer products, ironing products etc. Preferably they are laundry treatment products which are applied in an aqueous environment.

15

Various non-limiting embodiments of the invention will now be more particularly described with reference to the following figures in which:

20 Figure 1 shows, schematically, a fabric whiteness measurement system according to embodiments of the invention, together with a laundry load;

Figure 2 shows a package and a pair of whiteness guides of figure 1; and
Figure 3 shows an alternative shaped whiteness guide.

25 Referring to figure 2, a fabric whiteness measurement system according to the third aspect of the invention is shown, comprising one pair of corresponding whiteness guides 2,4 comprising a first whiteness guide 2 to be washed (with "wash me" indicia, which may be in text or by other visual indicia) and a second whiteness guide 4 to be dry stored (in a dry place, without be washed or wetted
30 and out of direct or strong sunlight). Visual indicia could be included on the second whiteness guide to inform the consumer of the storage requirements.

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The measurement system comprises a package 30 containing a laundry composition (not shown) in combination with a fabric whiteness measurement system of the invention. The pack 30 contains 1kg of laundry composition A or B or C or D (detailed hereinbelow).

5

Instructions for use of said fabric whiteness measurement system are included on the packaging, inside (on a leaflet) and on the guides themselves.

The consumer uses the measurement system as schematically shown in figure 1,
10 by:

- (a) washing the first whiteness guide 2, such as placing in a washing machine 10 along with a laundry load 20,
- (b) dry storing the second whiteness guide 4, followed by the step of
15 (b) comparing the whiteness of the washed first whiteness guide 2 with the whiteness of the second whiteness guide 4 to monitor improvement in whiteness of the first guide compared to the second guide.

The arrangement allows the consumer to compare the washing/conditioning compositions of the compositions. The monitoring is effected simply by adding the
20 first whiteness guide to a laundry load, whilst storing the second whiteness guide and then comparing the two guides after the wash has completed.

The provision of a whiteness guide together with the washing powder enables the consumer to effectively monitor the effectiveness of the composition and thereby
25 appreciate the benefit of whiteness agents added to the washing powder.

The step of comparing may take place after events which follow a washing operation, for instance drying of washed fabrics in a tumble dryer, outside, in sunlight or in shade.

30

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Both guides 2, 4 shown are visually identical. They of identical size and shape and texture, comprise identical fabric (weft, warp, weave construction), and identical whiteness.

- 5 The guide comprises a washable fabric, and preferably cotton and polyester. This has a woven construction, the weave being plain.

The fabric can withstand (physically) temperatures of the wash up to 90 degrees and drying temperature up to 150 degrees.

10

The guides are shaped to be visually distinct from remaining laundry items, allowing the first guide to be easily picked out from the laundry load after washing and the second guide to be easily dry-shaped. Accordingly they are shaped to resemble iconic articles of clothing such as the T-shirt (or a pair jeans etc.) but very small size as compared with the normal size of such articles. The waist and height is less than 30cm and in this embodiment is 10cm.

15

An alternatively visually interesting shape for guides 2 and 4 is shown in figure 3, and this comprises a perimeter of undulating curves with resultant projections.

20

This configuration visually distinguishes the guide from normal laundry items and the projections enable the user to more easily grasp the guide and pull it from a pile of wet or dry laundry which may have become tangled.

25

The first whiteness guide of figures 2 and 3 comprises a hole 40 for attachment to e.g. button of larger article to aid retrieval after the washing process has finished. The second guide has a loop 42 to aid dry storage (e.g. on a clothes horse or frame or door knob).

30

The or each whiteness is defined in terms of $L^*a^*b^*$ values (the CIE LAB whiteness space, (CIE 1976 $L^* a^* b^*$), where L^* is the lightness value of the whiteness ($L^*=0$ yields black and $L^*=100$ yields white), a^* is the red-green value

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(negative values indicate green while positive values indicate red) and b* is the yellow-blue value (negative values indicate blue and positive values indicate yellow).

5 Exemplary Base Powder Formulations A, B, C and D

Formulation	A	B	C	D
NaLAS	15	20	10	14
NI(7EO)	-	-	-	10
Na tripolyphosphate	-	15	-	-
Soap	-	-	-	2
Zeolite A24	7	-	-	17
Sodium silicate	5	4	5	1
Sodium carbonate	25	20	30	20
Sodium sulphate	40	33	40	22
Carboxymethylcellulose	0.2	0.3	-	0.5
Sodium chloride	-	-	-	5
Lipase	0.005	0.01	-	0.005
Protease	0.005	0.01	-	0.005
Amylase	0.001	0.003	-	-
Cellulase	-	0.003	-	-
Acid Violet 50	0.003	0.004	0.002	0.001
Fluorescer	0.1	0.15	0.05	0.3
Water/impurities/minors	remainder	remainder	remainder	remainder

Exemplary Base Liquid Formulations A, B, C and D

Formulation	A	B	C	D
NaLAS	14	10	15	21
NI(7EO)	10	5	21	15
SLES(3EO)	7	10	7	-
Soap	2	4	1	0
Citric acid	1	1	-	1
glycerol	0	1	5	0
Propylene glycol	5	3	0	4
Sodium chloride	1	-	-	-
Amine ethoxylated polymers	0.5	1	-	-
Triethanol amine	0	0.5	3	1
perfume	0.2	0.1	0.3	0.4
Protease	0.005	0.01	-	0.005
Amylase	0.001	0.003	-	-
lipase	-	0.003	-	-
Fluorescer	0.1	0.15	0.05	0.3
Acid Violet 50	0.002	0.003	0.0008	0.004
Solvent Violet 13	-	0.002	0	0.001
Water/impurities/minors	remainder	remainder	remainder	remainder

5 For both powder and liquids formulations, enzyme levels are given as percent pure enzyme. Levels of solvent violet 13 and Acid Violet 50 are given as pure dye. NI(7EO) refers to $R-(OCH_2CH_2)_nOH$, where R is an alkyl chain of C12 to C15, and n is 7. NaLAS is linear alkyl benzene sulphonate (LAS) and (SLES(3EO)) is C₁₂-C₁₈ alkyl polyethoxylate (3.0) sulphate.

10

A rinse conditioner formulation, for use in the rinse stage of the wash was also created. It contained 13.7wt% N,N-di(tallowoxyethyl)-N,N-dimethylammonium chloride, 1.5wt% perfume 0.004wt% acid violet 50, remainder minors and water.

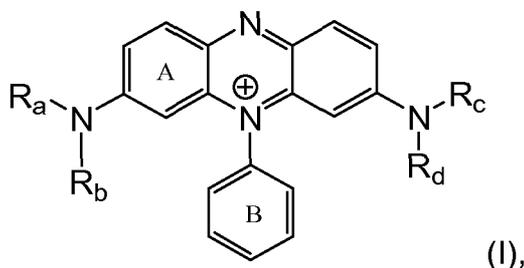
15 It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiment which are described by way of example only.

Claims

1. A whiteness measurement system comprising an outer package containing a detergent composition comprising an shading agent for improving, maintaining or
5 rejuvenating whiteness, and at least one pair of corresponding fabric whiteness guides, the or each pair comprising a first fabric whiteness guide to be washed and a second fabric whiteness guide to be dry-stored, wherein the guides comprise corresponding white fabric.
- 10 2. A system according to claim 1 characterised in that the guides are contained within an inner package, contained internally within the outer package.
3. A system according to any preceding claim in which the inner package is hermetically sealed.
15
4. A system according to any of claims 2-3 in which the inner package is provided loose within the outer package.
5. A system according to claim 4 in which the detergent composition is a free flowing
20 powder.
6. A system according to any preceding claim wherein the fabric comprises a fibre based on cellulosics, polyester, nylon elastane, acrylic, cotton.
- 25 7. A system according to any preceding claim wherein the guides are defined by a perimeter of undulating curves.
8. A system according to claim 9 wherein the shading agent comprises a no build-up shading agent.
30
9. A system according to claim 10 wherein the no build up shading agent is an acid azine dye.

- 19 -

10. A system according to claim 9 wherein the shading agent comprises:
 (i) from 0.0001 to 0.1 wt% of an azine dye, wherein the dye is of the following core structure:



5

wherein R_a , R_b , R_c and R_d are selected from: H, a branched or linear C1 to C7-alkyl chain, benzyl a phenyl, and a naphthyl;

the dye is substituted with at least one SO_3^- or $-\text{COO}^-$ group;

10 the B ring does not carry a negatively charged group or salt thereof;

and the A ring may further substituted to form a naphthyl;

the dye is optionally substituted by groups selected from: amine, methyl, ethyl, hydroxyl, methoxy, ethoxy, phenoxy, Cl, Br, I, F, and NO_2 .

15 11. A method of consumer measurement of fabric whiteness following a washing operation involving a shading agent, the method using a fabric whiteness guide of the first aspect and including the steps of:

(a) washing a first whiteness guide with a laundry composition ,

(b) dry storing a second whiteness guide, followed by the step of

20 (b) comparing the whiteness of the washed first whiteness guide with that of the second whiteness guide to ascertain whether the washed first whiteness guide shows an improved whiteness as compared with the second whiteness guide.

25 12. A method according to any of claims 8 – 12 wherein the step of comparing takes place following washing the first whiteness guide with a laundry composition.

- 20 -

13. A system according to any one of claims 1-10 where in the pack comprises instructions for use according to the method of claims 11-12.

14. A system substantially as hereinbefore described with reference to and/or as
5 illustrated in the accompanying drawings.

Fig.1.

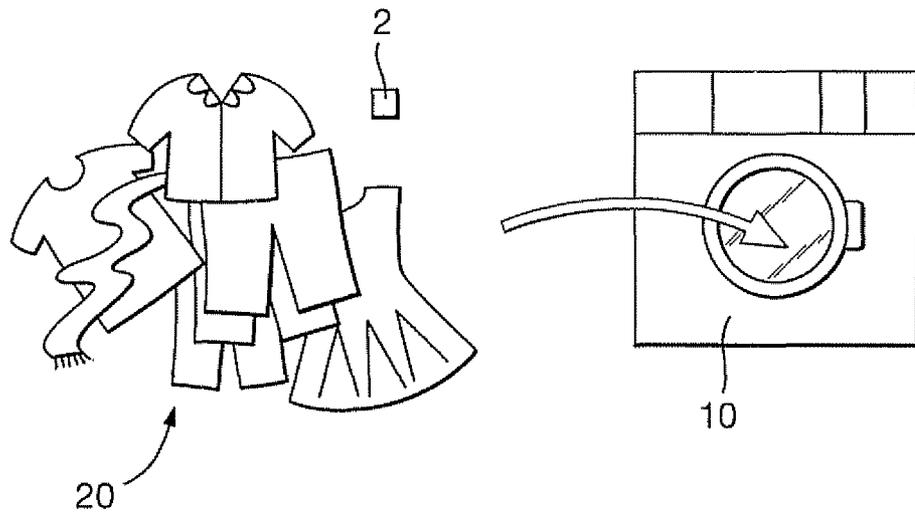


Fig.2.

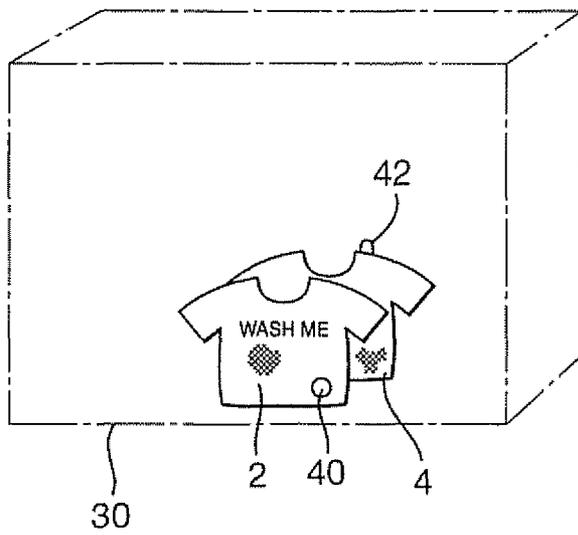
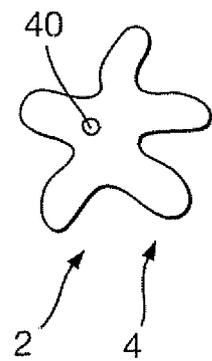


Fig.3.



INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2009/064742

A. CLASSIFICATION OF SUBJECT MATTER

INV. C11D3/40 C11D17/04 G01N21/29 G01N33/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C11D G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	US 2004/224872 A1 (FINE DAVID A) 11 November 2004 (2004-11-11) paragraphs [0197] - [0200]	1-14
X	US 3 991 104 A (NIELSEN DONALD R) 9 November 1976 (1976-11-09) example II	1-14
X	US 4 652 403 A (MAY BRONISLAV A ET AL) 24 March 1987 (1987-03-24) column 5, line 3 - line 10	1-14
A	WO 2008/090091 A (UNILEVER) 31 July 2008 (2008-07-31) claims	1-14



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

4 February 2010

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2009/064742

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