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US 20050054251 A1 **US 20040241210 A1**

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(71) Applicant(s):
Pantelitsa Constantinou
51 Barrington Court, Colney Hatch Lane,
LONDON, N10 1QH, United Kingdom

Demetrios Georgiou
11 Hyde Park Gardens, Winchmore Hill,
LONDON, N21 2PN, United Kingdom

Theognosia Georgiou
11 Hyde Park Gardens, Winchmore Hill,
LONDON, N21 2PN, United Kingdom

(72) Inventor(s):
Pantelitsa Constantinou
Demetrios Georgiou
Theognosia Georgiou

(74) Agent and/or Address for Service:
Pantelitsa Constantinou
51 Barrington Court, Colney Hatch Lane,
LONDON, N10 1QH, United Kingdom

(54) Abstract Title: **Garment impregnated with self-tanning composition**

(57) A self tanning system comprises a garment to be worn a user, wherein the garment is dimensioned and configured to engage the skin of the user at an area to be tanned, characterised in that the garment is impregnated with self-tanning agent.

The garment is preferably: stockings, body stocking, tights or pantyhose.

Also disclosed is a method of self-tanning using said tanning system, and the use of a self-tanning agent for impregnating a garment.

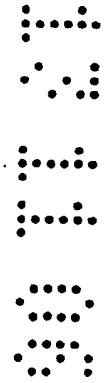
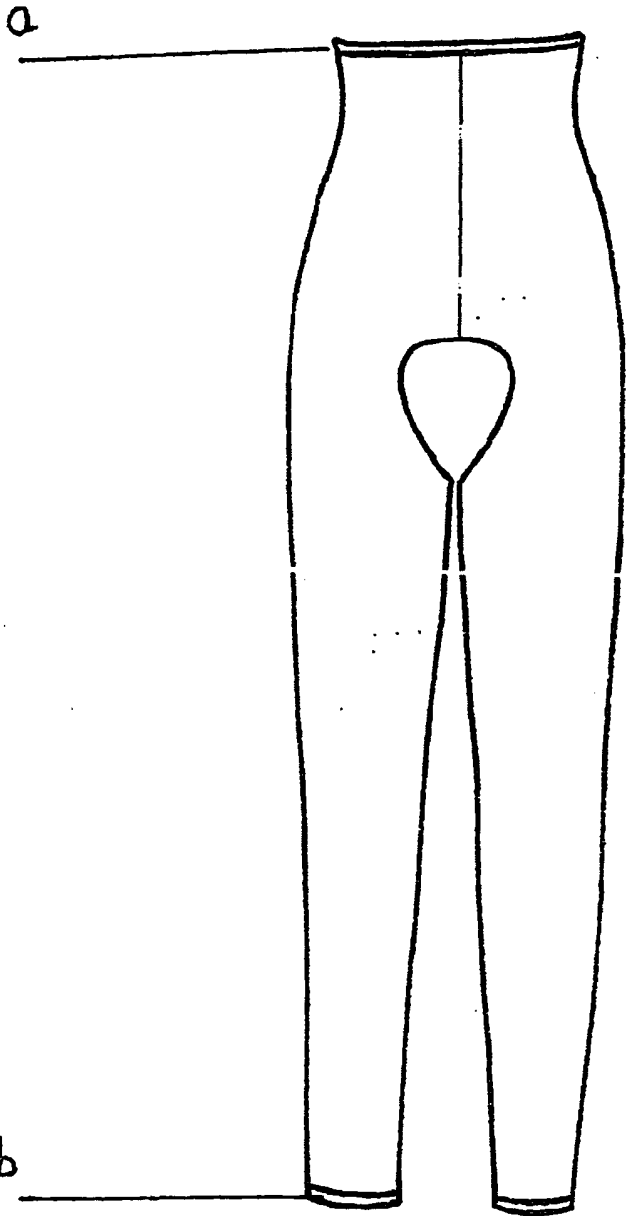
At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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"A SELF-TANNING SYSTEM"

5 TECHNICAL FIELD

The present invention relates to self-tanning, and more particularly to a self-tanning system to worn by a user.

10 BACKGROUND

Sunless self-tanning products have been available to the public since 1960, when Coppertone® released the world's first sunless-tanning product. Since then, there have been many advances in this field and it is now possible to purchase a wide range of sunless-tanning pills and sunless- or self-tanners and bronzers.

It is well known in the art to apply a self-tan agent to the skin by means of, for example, wipes, lotions, sprays, gels and mousses. Such products may either be colourless or almost colourless gels, liquids or lotions which develop once absorbed into the skin so as to give the appearance of tanned skin. Many self-tan agents contain the chemical dihydroxyacetone as the active ingredient. Dihydroxyacetone is a colourless compound which reacts with the surface of the skin to cause a colour change.

The application of such known self-tanning agents can be messy and inconvenient, and the prior art forms of self-tanning agent may have to be applied in a concealed cubicle such as a shower cubicle. Some products additionally have to be applied as a fine mist. This may affect surrounding furnishings and lead to unnecessary wastage of products because much of the

product is lost to the atmosphere or to the surroundings instead of meeting and being absorbed by the skin of the user.

5 Furthermore, the application of the self-tan agents by hand (as might be the case with lotions, gels and mousses) might cause a concentration of the self-tan agent on the palms of the hands, fingers and areas surrounding the finger nails. A concentration of self-tan agent in these areas might cause a undesirable discolouration of the skin and an unnatural appearance in these areas.

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Published US Patent Application US2005/0054251 discloses garments comprising cosmetic and/or dermatological active ingredients, including a self-tanning agent. However, this document provides no information as to how such a garment might be prepared and whether such a garment is effective in providing a self-tan. In fact, this document is more concerned with the use of antiperspirants or disinfecting substances in under-garments.

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Accordingly, there remains a need for alternative systems and methods for self-tanning, which are more convenient than the prior art methods and which avoid wastage and unnecessary mess.

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The inventors of the present Application have found that by impregnating a garment with a self-tanning agent, and then wearing the garment, a user can self-tan whilst avoiding the problems associated with the prior art.

25 SUMMARY OF THE INVENTION

According to the present invention, there is provided a self-tanning system comprising a garment to be worn by a user, wherein the garment is dimensioned and configured to engage the skin of the user at an area to be

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tanned, characterised in that the garment is impregnated with a self-tanning agent.

5 This overcomes the above-mentioned problems associated with prior art self-tanning systems.

Preferably the garment is a stocking or a pair of stockings.

10 A stocking or pair of stockings provides advantageously close contact of the garment to the user, thereby allowing effective transfer of a self-tanning agent to the skin of the user.

Advantageously the garment is a body stocking.

15 A body stocking allows the effective transfer of tanning agent to the entire body of the user.

Conveniently the garment is a pair of tights or panty hose.

20 A pair of tights or panty hose allows effective transfer of the self-tanning agent to a leg or legs of the user.

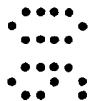
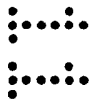
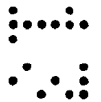
Preferably the self-tanning agent is selected from one or more of a liquid, gel or lotion or any combination thereof.

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These agents are particularly useful in the present invention by virtue of their ability to be absorbed by the garment and their absorption by the skin.

Advantageously the garment is nylon or elastane.

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These materials are particularly good at absorbing self-tan agent and transferring it to the skin of the user.

Conveniently the garment has a denier value of from 10 30.

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This range strikes a balance of being able to hold an appropriate amount of self-tan agent; a larger denier (larger gauge) of material cannot absorb as much self-tan agent, whereas a more fine denier tends to cause the self-tan agent merely to rest on the surface and not be absorbed.

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Preferably the garment is impregnated with a self tanning agent at a ratio of 4-6 grams agent per gram garment.

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This ratio allows sufficient self-tan agent to be absorbed without wastage of the agent.

The invention also provides method of self tanning, the method comprising the steps of:

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- a) providing a self tanning system according to the invention;
- b) wearing of the garment by the user for sufficient time for the self tanning agent to be absorbed by the skin of the user; and
- c) removing the garment.

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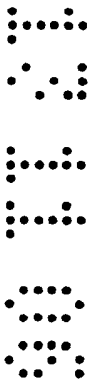
This aspect allows the user to self-tan effectively whilst the avoiding the problems associated with the prior art.

Preferably, the method further comprises the step of:

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- d) disposing of the garment.

Thus, the system is disposable.



The invention also provides the use of a self-tanning agent for impregnating a garment.

5 DRAWINGS

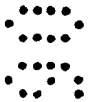
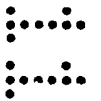
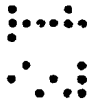
FIGURE 1 shows a front view of a self-tanning system according to one embodiment of the invention.

10 Figure 1 shows a pair of crutch-less tights which may be used as a unisex applicator for applying self-tanning agent. Of course, the present invention is not limited to tights and suitable garments for use in accordance with the present invention include body stockings, socks, stockings, tights and leotards.

15 Whilst Figure 1 shows a garment in which the garment does not contact the feet of the user, of course it is to be appreciated that stockings having foot parts may also be used in the present invention, in order to allow the feet to tan.

20 In order to prepare the self tanning system of the present invention, the garment, in this case tights, must firstly be impregnated with the self-tanning agent.

The self-tanning agent may be a self-tanning agent as known in the art, for
 25 example a self-tanning agent containing dihydroxyacetone acetone. Current proprietary brands of suitable self-tanning agents are, for example, Avon self-tan lotion, Nivea sun spray, Shiseido, although very many other brands are known in the art. Alternatively, any other known self-tanning agent may be used. The only condition is that the self-tanning agent must be able to be
 30 soaked up onto the fibres of the garment.



The garment may be impregnated by emersion in a tank containing the self-tan agent or by spraying the garment with self tan agent, for example via an air gun as known in the art and similar to the kind of air gun used for paint. When spraying the self tan agent, the garment may be "worn" on a manikin in order
5 to ensure even coverage by this spray. However, preferably the impregnation is effected via emersion in self tan agent.

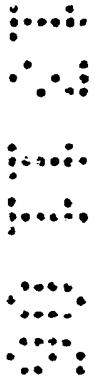
Preferably, once the garment has been impregnated in the self-tanning agent, the garment should be freed of any excess of self-tanning agent and should be
10 kept in an air tight manner in order to avoid drying of the agent, for example in a vacuum sealed foil sachet.

The length of time for impregnation will depend on the nature of the self-tanning agent, for example the viscosity, and also on the nature of the
15 garment, i.e. the material of manufacture. However, a preferred time for impregnation is approximately 2-4 minutes and preferred temperature of impregnation is room temperature, i.e. around 20-25°C.

Once ready for use, the garment should be worn by the user and should be
20 arranged about the user's person such that the garment contacts the skin in an even manner, i.e. without wrinkles or creases which may cause discontinuity in the final tan result.

The garment should be worn by the user for sufficient time that the self-tanning agent transfers to the skin of the user and is absorbed, e.g. for 5 minutes. The
25 garment may then be removed and disposed of, allowing the tan to develop on the skin of the user. Alternatively, the garment may be worn beyond the time sufficient for transfer, before removal.

30 A system according to the present invention has been prepared and tested on several subjects. An exemplary method for preparing the self-tan system and



the utilising self-tan system is set out in the example below. Participants in the tests reported that the self-tan system is successful, as it provides a convenient and mess-free way of providing an even self tan.

5 **EXAMPLE**

A pair of tights in accordance with those shown in Figure 1 was impregnated with self-tan lotion for 3 minutes at 22 °C before removal of any excess self-tanning agent.

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The tights were then worn by a user for 5 minutes before being removed. Tanning-agent transfers from the tights to the legs of the user (in this example) without any excess agent being lost to the surroundings.

15 The tights were then removed and discarded, allowing an even tan to develop on the legs of the user.

When used in this specification and claims, the terms "comprises" and "comprising" and variations thereof mean that the specified features, steps or integers are included. The terms are not to be interpreted to exclude the presence of other features, steps or components.

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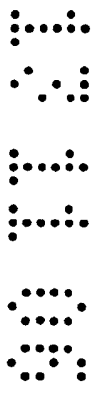
The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

25



Claims:

1. A self-tanning system comprising a garment to be worn by a user, wherein the garment is dimensioned and configured to engage the skin of the user at an area to be tanned, characterised in that the garment is impregnated with a self-tanning agent.
2. A system according to Claim 1 wherein the garment is a stocking or a pair of stockings.
3. A system according to Claim 1 or Claim 2 wherein the garment is a body stocking.
4. A system according to Claim 1 or Claim 2 wherein the garment is a pair of tights or panty hose.
5. A system according to any preceding Claim wherein the self-tanning agent is selected from one or more of a liquid, gel or lotion or any combination thereof.
6. A system according to any preceding Claim wherein the garment is nylon or elastane.
7. A system according to any preceding Claim wherein the garment has a denier value from 10 to 30.
8. A system according to any preceding Claim wherein the garment is impregnated with a self tanning agent at a ratio of 4-6 grams per gram garment.
9. A method of self tanning, the method comprising the steps of:



a) providing a self tanning system according to any preceding Claim;

5 b) wearing of the garment by the user for sufficient time for the self tanning agent to be absorbed by the skin of the user; and

c) removing the garment.

10. The method of Claim 9, further comprising the step of:

d) disposing of the garment.

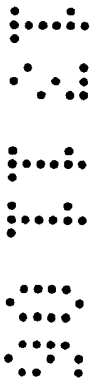
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11. Use of a self-tanning agent for impregnating a garment.

12. A self tanning system or a method of self tanning substantially as herein described, with reference to the accompanying drawing

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13. Any novel feature or combination of features disclosed herein.



Application No: GB0622449.7

Examiner: Fiona Warner

Claims searched: 1, 11

Date of search: 10 July 2007

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-6,9 & 11 at least	US 2004/0241210 A1 (JENKEL) Whole document relevant
X	1-6,9 & 11 at least	US 2005/0054251 A1 (BEIERSDORF) Whole document relevant

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& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

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Worldwide search of patent documents classified in the following areas of the IPC

A41B

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
None		