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(54) **Packaging wrapper for hygiene or wiping products**

(57) The invention concerns a packaging wrapper for hygiene or wiping products, preferably handkerchiefs, household or other hygiene tissues or nonwovens. The packaging wrapper comprises a package material and an opening for removal of the hygiene or wip-

ing products. The packaging wrapper comprises at least one phosphorescence part comprising a phosphorescent or luminescent substance, wherein the said part or parts exhibit an afterglow in the dark.

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## Description

### Technical Field

[0001] The invention relates to a packaging wrapper for hygiene or wiping products, such as handkerchiefs, household or other hygiene tissues or nonwovens. The packaging wrapper comprises an opening for removal of the products and preferably a sealing mechanism. The opening can be formed and placed anywhere on the package. The packaging wrapper can be configured as a pouch. The packaging wrapper comprises preferably also a sealing flap that at least partially overlaps the opening for removal of the hygiene or wiping products.

### Technical background

[0002] The conventional prior art package or packaging wrapper for a hygiene or a wiping product often includes a flexible material, such as a wrapper of a thin plastic foil, a nonwoven or a nonwoven fabric coated with a plastic film, containing for instance handkerchieves or the like. Packaging wrappers for paper handkerchiefs are commercially available in a variety of versions and they are provided with a removal opening for the products. The paper handkerchiefs are conventionally packed in bundles of for example ten handkerchiefs or so in a wrapper.

[0003] One problem with the conventional prior art package for hygiene or wiping products is that it can not be readily seen or found in the dark. Often, the consumer and user will have an urgent need for the products in question, especially during illness, which in turn often tends to be treated in semidark or dark areas, and especially during night time. The need for such products are usually also stronger during night time, including evenings and mornings, when mucus membranes tend to be more swollen and phlegm and mucus quite annoying. The need for hygiene or wiping products is of course not limited to illness situations, on the contrary, these kind of products are frequently used in any possible situation, and if there is not enough light, then the product is difficult to find and see. For instance, when small children are concerned there are often vomits, druels, dregs as well as gruel or milk spillage involved. But of course the hygiene or wiping products could be used for anything that the consumer and user could come up with and it would neither be possible nor appropriate to mention every possible usage.

[0004] Another problem is that many persons are easily disturbed by annoying noises and sudden changes in lightness or darkness. The rest, calmness, or the sleeping period is thus then easily disturbed. In order to find a package of hygiene or wiping products in the dark, it is either required to search for it in the dark, which is time consuming and involves the risk of being noisy, or to turn on the light, if it is possible, thus risking to disturb

or wake up others including the user himself that also could be adversely affected by the sudden change in lighting.

[0005] This can be troublesome, especially when someone that does not easily fall asleep or come to rest again is woken or disturbed. The parties concerned could be anyone being in the vicinity as well as the person himself. It could be infants, children, a mate or partner, patients, travelling companions, animals or anyone that is not to be disturbed by noises or changes in light caused by the user of the product. The environment could be anything from resting or sleeping areas or any other dark areas in the family circle to any other public place, such as hospitals, nursing homes, daycare centers, train wagons, buses etc. The persons, the situations, and the circumstances could be anything, from avoiding noises, when searching for the product, or avoiding turning the lights on or any other sudden changes in light, to occasions when it is actually impossible or difficult to achieve enough lighting.

### Disclosure

[0006] The purpose of the invention is to reduce or remove any of the above mentioned problems. The invention is based on providing a packaging wrapper for hygiene or wiping products, especially for handkerchiefs, household or other hygiene tissues or nonwovens, that consists of or comprises at least one phosphorescence part exhibiting an afterglow in the dark. The phosphorescence part or parts comprises a phosphorescent or luminescent substance. The packaging wrapper comprises a package material and an opening for removal of the products, and the opening can be anywhere on the package and of any form. Preferably, the opening includes a sealing mechanism and/or a sealing flap that at least partially overlaps the opening for removing the products.

[0007] It is to be understood that the invention is not limited in its application to the details of construction and the arrangements of components set forth in the following description.

[0008] The invention permit seeing at any time a packaging wrapper for a hygiene or a wiping product, such as a package of tissues, eg handkerchiefs or the like. In one preferred embodiment, the packaging wrapper is configured as a pouch, and suitable for all kinds of thin packaging material, including plastic, paper, nonwoven or similar materials. The opening can be formed on an elongated side of the packaging wrapper or any other convenient location on the package.

[0009] In the event of being in the dark or without the normal daylight or electric power supply, a package for hygiene or wiping products with a luminescent substance will glow for an extended period of time, helping one to find the wanted or desired package without having to turn on the lights on. This is a convenient way to fill any need there might be for a hygiene or wiping prod-

uct without having to turn the lights on and thereby be a nuisance and it is also a good way to achieve independence from light sources.

**[0010]** Not only the fact that the light or rather the darkness is kept unchanged, but also any disturbing noise is avoided since the desired package glows in the dark and may be found in a quick and easy manner. In addition, if the package of handkerchiefs, or the like, is accidentally dropped or laid down, it is easily located in the dark environment when it has a glow in the dark property.

**[0011]** It is good if the phosphorescence of the phosphorescent or luminescent substance provides a long afterglow in the dark after the stimulus is cut off or has disappeared. However, the exact duration of the afterglow in hours is not limiting in any way. The choice of the phosphorescent or luminescent substances can easily be altered by the skilled person depending on the desired result both in brightness and afterglow duration.

**[0012]** The phosphorescence part may be disposed on a surface of the package or dispersed throughout the material which forms this part. The material that forms the phosphorescent part may also be included within the package as well as being a treated, an amended, an added, an integral or an independent part of the package. The phosphorescent or luminescent substance may be a part of and/or a constituent of the package material.

**[0013]** The phosphorescent or luminescent substance can be used as a component in the compositions of the package material. This means for example that the package material can consist of or may include for instance molded, extruded or otherwise formed plastic articles, as well as any non-woven articles including a phosphorescent or luminescent substance of the invention which exhibits an afterglow in the dark.

**[0014]** According to another embodiment, the phosphorescent or luminescent substance is applied to the surface of the package material. According to the invention, the luminous substance may be connected with the package in at least one area of said package in any manner. The phosphorescent or luminescent substance or the phosphorescence part or parts are formed by colouring, pigmentation, coating, printing, etching, glueing, embossing, stamping, riveting, pinching or welding by way of fastening, adhesion, adsorption or absorption to or into the packaging wrapper.

**[0015]** Further, another embodiment discloses that the phosphorescence part or parts of said package are printed in any possible manner with an ink, or the like, comprising a phosphorescent or luminescent substance.

**[0016]** However, any method that will include the luminescent substance in the package or that could be used to apply the substance to the package is of course a part of the invention. Also, different methods could be combined, such as for example when the phosphorescent or luminescent substance is dispersed throughout

the material which forms the phosphorescence part, that material may be added, applied or disposed on the surface of the package in question.

**[0017]** The phosphorescent or luminescent substance can also be blended, mixed or attached to the sealing mechanism of the package. The sealing mechanism may include a pressure-sensitive adhesive or a hook- and loop fastening system or other conventional sealing mechanisms.

**[0018]** The phosphorescent part or parts of the package can be designed to constitute a form or a shape anywhere on the package. The form or shape could be a logotype, a design, a picture, a written message, a trademark, a company name, or in any way a descriptive or figurative pattern or design, sign, symbol or the like.

### Detailed description

**[0019]** The present invention relates to a packaging wrapper for a hygiene or wiping product, such as soft paper, tissue, or nonwoven. The invention could be embodied in various ways. In the following, the term soft paper, tissue or nonwoven does not only refer to the raw material as obtained from the paper or nonwoven machine, but also covers the corresponding further processed products, since there often is no strict borderline to distinguish the same. Nonwovens may also be called textile-like composite materials, which represents flexible porous fabrics that are not produced by the classic methods of weaving warp and weft or by looping; but by intertwining, cohesive or adhesive bonding of fibers, or a combination thereof. The nonwoven material can be formed of natural fibres, such as cellulose or cotton fibres, but can also consist of synthetic fibres, such as PE, polypropylene (PP), polyurethane (PU), a polyester, nylon or regenerated cellulose, or a mix of different fibres. The fibers may for example be present in the form of endless fibers or prefabricated fibers of a finite length, as synthetic fibers produced in situ or in the form of staple fibers. The nonwovens according to the invention may thus consist of mixtures of synthetic fibers and cellulose fibrous material.

**[0020]** Hygiene or wiping products primarily includes all kinds of dry-creped tissue paper, as well as wet-creped paper and cellulose or pulp wadding or all kinds of nonwovens, or combinations, laminates or mixtures thereof.

**[0021]** Typical properties of tissue include the ready ability to absorb tensile stress energy, their drapability, good textile-like flexibility, properties which are frequently referred to as bulk softness, a high surface softness, a high specific volume with a perceptible thickness. As high a liquid absorbency as possible and, depending on the application, a suitable wet and dry strength as well as an interesting visual appearance of the outer product surface. These properties, among others, allow tissue paper to be used for example as cleaning wipes: paper or nonwoven wipe, windscreen cleaning wipe, kitchen

paper, etc, sanitary products: e.g. toilet paper, paper or nonwoven handkerchiefs, household towels, towels, cosmetic wipes: facials and as serviettes or napkins just to mention some of the products that can be used.

**[0022]** The hygiene or wiping products may be unfolded or folded, interleaved or individually placed, stacked or rolled, connected or not, in any suitable manner. The relevance thereof is not important to the object of the invention.

**[0023]** The packaging wrapper can be made of a variety of flexible, plastic film materials, such as polyethylene, polypropylene or polyester just to mention some materials that can be used. The package or the cover may also be made of any flexible, nonwoven material. The flexible material can also have the capability of forming a barrier between the tissues and the environment to keep the tissues clean and dry. The material is normally produced and printed as continuous sheeting and then cut into such sections so that the desired package can be formed therefrom.

**[0024]** Luminescent or phosphorescent substances as such are well known and they remain luminous with a soft, slowly decaying radiation once they have been excited. Such substances can generate a useful level of luminous flux for several hours when placed in the dark after having absorbed sunlight or artificial light of suitable wavelength.

**[0025]** The herein referred luminescent or phosphorescent substance or material is to be understood as though the invention comprises any material that glows or emits lights. With regard to this terminology, phosphorescent material in the manner used here comprises chemiluminescent and bioluminescent materials as well as every substance that emits light and exhibits an afterglow after being exposed to heat, light, electrical power, discharge or signals without any substantial rise in temperature.

**[0026]** The luminescent substance may be selected either as one which produces the highest level of visible radiation output as a result of decay of said luminescent pigment in the absence of visible light, or as one which produces an output for an extended, predetermined period. The combination of the two effects must of course be balanced and adjusted to the usage and the requirements. The selection of the luminescent or phosphorescent substance is not critical or essential to the invention, however a careful choice allows the specific purpose to be achieved. The luminescent substance is most preferably selected to emit the colour yellow or yellow-green, amongst the range of available colours that probably has the most striking effect on the eye. But it could of course be of any available colour.

**[0027]** Exemplary glow in the dark materials include often phosphorescent materials which have the property of continuing to emit light for an extended period of time after excitation. Phosphorescent materials have earlier been used in a variety of commercial applications because they have the property of continuing to emit

light for an extended period of time after excitation. Phosphorescent pigments have, therefore, been used in warning signs; marking of vital machinery; dial illumination; directional signs on walls of underground stations, garages, hallways; and applied to helmets as used in fire departments, accident prevention, etc. Phosphorescent pigments have also found application for use on protective clothing, sports equipment and a variety of toys where the effect of glowing in the dark provides amusement, ornamental or safety features.

**[0028]** In the event of a blackout or other emergency in which the normal electric power supply is cut off, objects coated with phosphorescent paint will glow for extended periods of time, helping to demarcate walkways, stair mountings, exit doors and the like if they are so coated. Phosphorescent substances have also been employed for door knobs, corner indicators, switches, bell pushes, ash trays, watch faces and stands, medicine bottles, ornamentation, storage, hearing protective devices, identification labels.

**[0029]** US 4,165,002 concerns authenticating a paperboard package with a phosphorescent indicator. However, even though phosphorescent materials are known to be used for different articles for a long time, it has not been known to use such substances on packaging wrappers for hygiene or wiping products.

**[0030]** Phosphorescent materials include a phosphor which has been artificially prepared and has the property of luminescence when activated by appropriate wavelengths of light. A variety of phosphors are available for use in providing luminescence when activated by an appropriate light source. Commercially available phosphors include silicates, metal aluminate oxides, alkaline earth aluminate phosphors, alkaline earth metal aluminate oxide phosphors, sulfides, zinc sulfide, metallic zinc sulfide (eg cadmium), alkaline earth sulfides and various rare earth compounds. The compounds can be with or without activators, coactivators or compensators. Activators are often used to provide the desired rapid activation of the phosphorescent or luminescent substance.

**[0031]** Many phosphorescent materials and more particularly phosphors are commercially available and emit different colours and continue to emit radiation for different periods of time after they are removed from ambient light. Accordingly, the selection of particular phosphors or combination of phosphors to provide predetermined characteristics is another factor that can be employed in the present invention to create different kinds of a phosphorescent part or parts of the package.

**[0032]** The phosphorescent pigments may be incorporated into a variety of carriers that can be a part, a constituent, a component of, incorporated, integrated, applied, added, connected or attached to the package. The list of different methods that could be used would be large. Therefore, only some will be mentioned even though the scope of the invention covers all conventional methods used in order to achieve a package of hy-

giene or wiping products comprising at least one phosphorescence part.

**[0033]** In one embodiment of the invention, the phosphorescent or luminescent material is applied or disposed on the surface of each predetermined part of the package in the form of any predetermined printed text, form, shape, message or artwork.

**[0034]** This can be easily accomplished by dispersing or disposing the phosphorescent or luminescent substance in a suitable medium and applying the substance to the surface of the predetermined phosphorescence part or parts by any known printing methods, such as silk screening, thermoprinting, or off set techniques. If a material has an inherent adhesive capability then, in such cases, the phosphorescent or luminescent substance can be applied or coated directly on a surface of such material.

**[0035]** Other methods that could be used would be different colouring techniques, pigmentation, etching, coating, glueing, embossing, stamping, riveting, pinching, welding or any other methods that would cause fastening, adhesion, adsorption or absorption. Of course, even mechanical methods could be used to apply a phosphorescence part or parts such as different needling techniques, stapling, sewing and taping.

**[0036]** The predetermined phosphorescence part or parts could also be made in a material different from the package and then applied to the package, either on the surface of a package or made to be a part of the package.

**[0037]** The phosphorescence part or parts may also be achieved by using a package with different layers. A phosphorescent or luminescent layer can be secured with its luminescent surface and then covered by image means. The image means forms an image on its surface via a plurality of image defining opaque and translucent areas. The opaque areas of the image means prevent the light coming from the photons emitted from the excited atoms of the luminescent substance from passing through the opaque areas of the image means. The translucent areas of the image means allow the emitted light from the luminescent substance to pass through the translucent areas of the image means.

**[0038]** A protection pattern could also be attached to the surface and, for example, extend over substantially the entire surface to establish a visual shield that creates imaginary protection. The pattern of the phosphorescent substance, when exposed to light and placed in a dark environment, emits light for a period of time, whereby the pattern is shown. The pattern has open spaces containing phosphorescent substance. In this way a glow in the dark image may be produced. Securement means is also provided for securing the luminescent layer to the image means.

**[0039]** Further, the phosphorescence part or parts could also be applied to the sealing mechanism in different ways. The phosphorescent or luminescent substance with or without any carrier could be blended in,

mixed with or attached to the sealing of the package. The sealing mechanism could involve a pressure-sensitive adhesive, a hook- and loop fastening system or a tape or the like. The sealing mechanism can of course include a sealing flap that is fastened in any suitable manner.

**[0040]** The invention also comprises any evidently suitable method or methods that will involve the process of achieving a package for hygiene or wiping products that comprises or consists of one phosphorescent part or several phosphorescent parts. The invention is capable of other embodiments and of being carried out in various ways.

## Claims

1. A packaging wrapper for hygiene or wiping products, preferably handkerchiefs, household or other hygiene tissues or nonwovens, comprising a package material and an opening for removal of the products, **characterised by** at least one phosphorescence part comprising a phosphorescent or luminescent substance wherein the part or parts exhibit an afterglow in the dark.
2. A packaging wrapper according to claim 1, **characterised by** a sealing mechanism for the opening.
3. A packaging wrapper according to claim 1 or 2, **characterised by** a sealing flap that at least partially overlaps the opening for removing the products.
4. A packaging wrapper according to any one of the preceding claims, **characterised in that** said wrapper is configured as a pouch.
5. A packaging wrapper according to any one of the preceding claims, **characterised in that** the phosphorescent or luminescent substance is a part of and/or a constituent of the package material.
6. A packaging wrapper according to any one of the preceding claims 1 to 4, **characterised in that** the phosphorescent or luminescent substance is applied to the surface of the package material.
7. A packaging wrapper according to any one of the preceding claims, **characterised in that** by way of fastening, adhesion, adsorption or absorption to or into the packaging wrapper, the phosphorescent or luminescent substance or the phosphorescence part or parts are formed by colouring, pigmentation, coating, printing, etching, glueing, embossing, stamping, riveting, pinching or welding.
8. A packaging wrapper according to claim 6 or 7, **characterised in that** the phosphorescence part or

parts of said package is printed in any possible manner with an ink comprising a phosphorescent or luminescent substance.

9. A packaging wrapper according to any one of the preceding claims 6 to 8, **characterised in that** the phosphorescence part or parts of said package are designed to constitute a form or shape such as a logotype, a design, a picture, a written message, a trademark, a company name, or in any way a descriptive or figurative pattern or design, sign, symbol or the like. 5 10
10. A packaging wrapper according to any one of the preceding claims 2 to 9, **characterised in that** the phosphorescent or luminescent substance is blended, mixed or attached to the sealing mechanism. 15
11. A packaging wrapper according to any one of the preceding claims 2 to 10, **characterised in that** the sealing mechanism includes a pressure-sensitive adhesive. 20
12. A packaging wrapper according to any one of the preceding claims 2 to 10, **characterised in that** the sealing mechanism includes a hook- and loop fastening system. 25
13. A packaging wrapper according to any one of the preceding claims, **characterised in that** the phosphorescent or luminescent substance exhibits a long afterglow in the dark after the source of stimulus is cut off or has disappeared. 30

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# EUROPEAN SEARCH REPORT

Application Number  
EP 03 00 8758

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Place of search THE HAGUE		Date of completion of the search 20 August 2003	Examiner SERRANO GALARRAGA, J
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 O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 03 00 8758

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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20-08-2003

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