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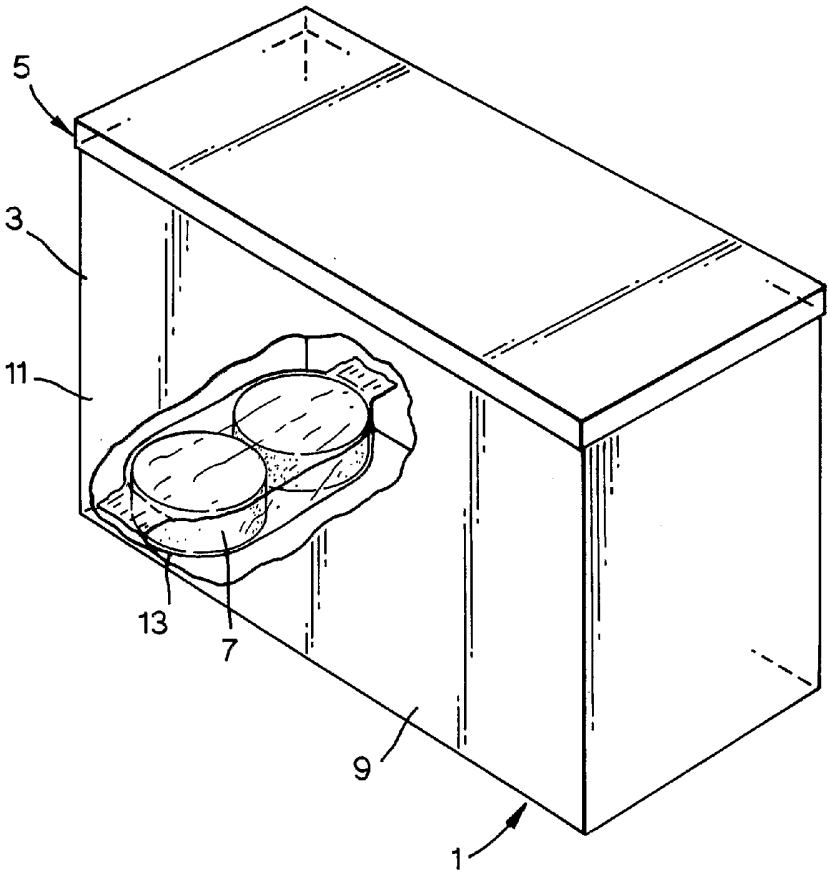
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[Continued on next page]

(54) Title: EMBALLAGE POUR DOSE UNITAIRE



(57) Abstract: Cette invention concerne un récipient contenant une pluralité de tablettes de produit pour lessive ou pour lave-vaisselle automatique emballés dans un emballage ou dans des emballages intérieurs, le ou les emballages intérieurs comportant une ou plusieurs fenêtres dont la transmissivité lumineuse se situe entre 70 % et 99 % et au travers desquelles au moins une partie des tablettes est visible. Le récipient comprend au moins une partie dont la transmissivité lumineuse se situe entre 70 % et 99 %, et qui absorbe une fréquence ou une plage de fréquences de lumière visible correspondant à la fréquence ou à la plage de fréquences absorbées par au moins une partie de la fenêtre de l'emballage de la tablette.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

UNIT DOSE PACKAGING

The present invention relates to the field of packages for house hold e.g. laundry, automatic dishwash tablets which improve the visual appearance of tablets stored therein.

Users of granular laundry detergents often gauge the effectiveness of the detergent by its colour, for example the more white the colour, the more effective the detergent is perceived to be. However, in the case of tablets, consumers will often expect a laundry tablet to be technologically advanced as compared with a granular product. Hence a tablet must often provide more than simply a cleaning cue (whiteness) to convince the consumer of its technologically capability. Large particles, speckles or portions which are coloured may be used to provide cues to the consumer in this respect. A multi-functional tablet might, for instance, have one or more coloured layers as a cue to two functions: general cleaning and specific stain removal.

With many laundry tablets it is desirable to have inner packaging in addition to an outer container, to provide additional protection from moisture. For example, tablets may be film-wrapped in pairs. The film-wrapped tablets are contained in an outer container such as a paperboard carton.

The tablet flow wrap may be clear and transparent and as such, allow the user to view the tablet, however it may also bear visual indicia to improve the appearance of the film wrap itself, for example, brand images and colours,

instructions e.g. to guide the consumer to where a tear strip begins etc. However, such visual indicia limit the tablet's visibility.

The object of the present invention is to provide a package for tablets wrapped in an inner wrapper, in which the visual appearance of tablets whilst in their packaging is enhanced without changing the composition of the tablet or changing the visual appearance of the inner wrapper in order to provide more visually pleasing tablets.

Accordingly, the invention provides a container containing a plurality of laundry or automatic dishwash tablets wrapped in an inner package or packages, said inner package/s including one or more viewing regions having light transmissivity in the range 70% to 99% through which at least a portion of the tablet/s is/are visible, wherein the container comprises at least one portion having light transmissivity in the range 70% to 95% and which absorbs a frequency or range of frequencies of visible light corresponding with the frequency or range of frequencies absorbed by at least a part of the visible portion of the tablet.

The term "corresponding" as used herein means that the minimum and maximum values of one frequency range are within 100 nanometers, and preferably within 50 nanometers, and further preferably within 35-30 nanometers, of the respective minimum and maximum values of the other frequency range. When comparing a single frequency with another frequency or frequency range, correspondence is achieved

when the single frequency is within 100 nanometers, preferably 50 nanometers and further preferably 25-30 nanometers, of the other frequency or minima/maxima of the other frequency range.

The coupling of high light transmissivity together with the aligned absorption properties of the outer packaging and packaged tablets provides the advantage that the frequencies of visible light emitted by the tablet or tablet portion/s (i.e. the colour) are accentuated in terms of both colour intensity and brightness, by the outer packaging. Furthermore,due to the light transmissivity, his accentuation occurs whilst the tablet is viewed whilst still within the container.

This helps to counteract any lack of tablet visibility arising from opacity of a portion or portions of the inner packaging.

Light transmissivity of the outer container is preferably 80% -90%.

In a preferred embodiment, the light transmissivity of the outer container in combination with the light transmissivity of viewing regions of the inner packaging is together, 70 - 90% and preferably 80-90% thereby allowing the colour of the tablets, accentuated by the outer container, to be viewed through the container material, without having to open the container. This allows consumer viewing of the tablet at point of sale. In this case, it is advantageous to have such portion or portions on a front facing wall that is to say, a

wall which faces frontwards towards the consumer when the containers are sold.

Preferably the viewing regions of the inner package/s are clear and transparent.

The inner package/s may include one or more regions of low light transmissivity as compared with the viewing regions, i.e. light transmissivity of less than 70%, e.g. due to graphics, text, coloured portions. These regions may, in whole or in part, absorb a frequency or range of frequencies of visible light corresponding with the frequencies or range of frequencies absorbed by the said portion outer package.

The container may comprise a base wall and a plurality e.g. four side walls with removable lid. One or more of the walls may have high light transmissivity and absorption properties according to the invention. In a preferred embodiment, all walls have high light transmissivity and absorption properties according to the invention.

The inner package or packages may comprise plastic film material, which may be flow wrapping.

Said portion/s of the tablet may comprise the entire tablet or it may comprise one or more layers, areas, patterns or even particles. Preferably the portions are non-white. The tablets may be any shape but are preferably cylindrical and the or each portion may be visible as an annular ring.

The outer container may comprise any suitable material, and is preferably plastic for example polystyrene, or polyethylene, and may be formed by extrusion, moulding, thermoforming.

Various non-limiting embodiments of the invention will now be more particularly described.

In the first embodiment (shown in fig 1),a container 1 comprises a thermoformed polystyrene body 3 with removable polypropylene lid 5 contains a plurality of tablets 7 (only 1 pair shown). The body comprises a base 9 and four side walls 11. The container further includes clip on lid 5 which can be completely removed and replaced. The tablets are cylindrical and film-wrapped 13 side by side in pairs. The film wrapping 13 bears visual indicia comprising brand logos.

The container walls of the first embodiment all have a light transmissivity of 85% and absorb frequencies of light in all but the "blue" region (wavelength approx. 450-500 nm) of the spectrum, hence appearing "blue" in daylight.

The tablets comprise a white layer and a layer (visible as an annular ring) which absorbs frequencies of light in all but the "blue" region (wavelength approx. 450-500 nm) of the spectrum, hence also appearing "blue" in daylight.

In a second embodiment, the container is as described for the first embodiment except that the walls absorb frequencies of light in all but the "green" region (wavelength approx. 520-565 nm) of the spectrum, hence

appearing "green" in daylight. The tablets in the second embodiment, are white with speckles which absorb frequencies of light in all but the "green" region (wavelength approx. 520-565 nm) of the spectrum, hence also appear green in daylight.

Preferably, the minimum and maximum of frequency ranges of light absorbed by the container and the tablet layer are within 30 nanometers of each other. Thus the frequency ranges of the reflected and transmitted light correspond closely.

Light transmissivity is measured according to ASTM method D1003.

In both embodiments described here, the container is rigid. However, it will be appreciated that the present invention can be adapted for use with flexible packages such as bags, pouches and the like. Further, the present invention can be used with packages having one or more curved or curvilinear panels.

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

Claims

1. A container containing a plurality of laundry or automatic dishwash tablets wrapped in an inner package or packages, said inner package/s including one or more viewing regions having light transmissivity in the range 70% to 99% through which at least a portion of the tablet/s is/are visible, wherein the container comprises at least one portion having light transmissivity in the range 70% to 95% and which absorbs a frequency or range of frequencies of visible light corresponding with the frequency or range of frequencies absorbed by at least a part of the visible portion of the tablet.

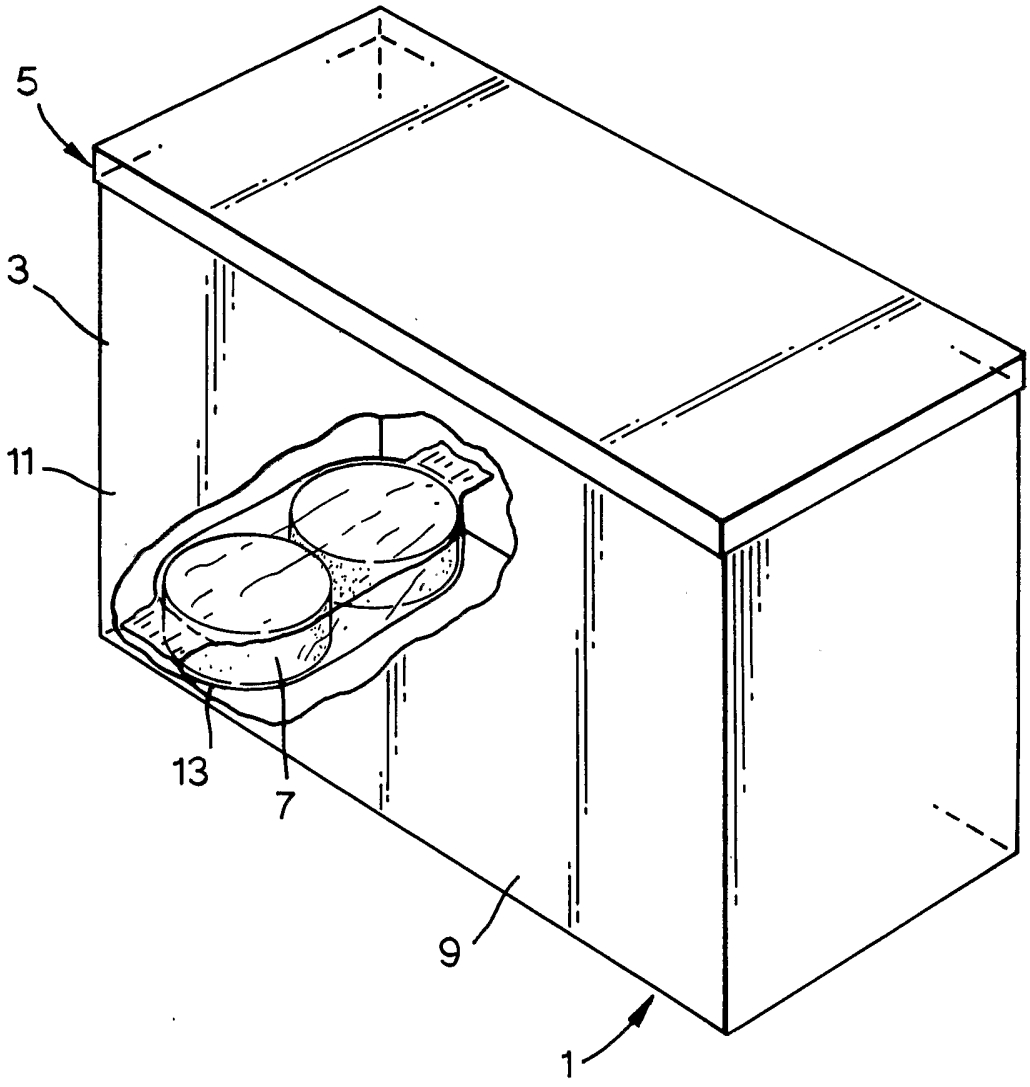
2. A container according to claim 1, wherein the light transmissivity of the container together with said viewing regions is in the range 70 -85%.

3. A container according to claim 1 or claim 2 wherein the inner packaging is a plastic film wrap.

4. A container according to any preceding claim wherein the said at least portion of the tablet comprises one or more layers or particles.

5. A container according to any preceding claim wherein the tablet or tablets comprise a laundry composition.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D77/02 B65D75/38 B65D65/20

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)
IPC 7 B65D

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99/37557 A (HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN; BARTHEL, WOLFGANG; KUENZEL, W) 29 July 1999 (1999-07-29) page 4, line 14 - page 6, line 11; figures 1,2	1-5
A	WO 02/30786 A (THE PROCTER & GAMBLE COMPANY) 18 April 2002 (2002-04-18) page 3, line 29 - page 6, line 25; figures 1,2	1-5
A	DE 100 25 187 A1 (HENKEL KGAA) 19 July 2001 (2001-07-19) page 1, column 3, line 38 - column 4, line 4; figures 1,20	1-5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9937557 A	29-07-1999	DE 19852936 A1	12-08-1999
		WO 9937557 A1	29-07-1999
		JP 2002500992 T	15-01-2002
		US 6629606 B1	07-10-2003
WO 0230786 A	18-04-2002	EP 1199254 A1	24-04-2002
		AU 1456202 A	22-04-2002
		WO 0230786 A1	18-04-2002
DE 10025187 A1	19-07-2001	NONE	