



US 20030192807A1

(19) **United States**

(12) **Patent Application Publication**

De Caluwe

(10) **Pub. No.: US 2003/0192807 A1**

(43) **Pub. Date: Oct. 16, 2003**

(54) **PACKAGE WITH CHILD DETERRENT MEANS**

(30) **Foreign Application Priority Data**

(75) Inventor: **Robert Corneel Julia Maria De Caluwe**, Londerzeel (BE)

Jul. 23, 1998 (EP) 98202479.6

Correspondence Address:

Publication Classification

THE PROCTER & GAMBLE COMPANY
INTELLECTUAL PROPERTY DIVISION
WINTON HILL TECHNICAL CENTER - BOX 161
6110 CENTER HILL AVENUE
CINCINNATI, OH 45224 (US)

(51) **Int. Cl.⁷** **B65D 83/04**
(52) **U.S. Cl.** **206/532**

(73) Assignee: **The Procter & Gamble Company**, Cincinnati, OH (US)

(57) **ABSTRACT**

(21) Appl. No.: **10/410,953**

(22) Filed: **Apr. 10, 2003**

Related U.S. Application Data

(62) Division of application No. 09/744,275, filed on Jan. 22, 2001, filed as 371 of international application No. PCT/US99/16137, filed on Jul. 16, 1999.

A method for using a child-resistant package containing at least one unit of a dangerous consumer product, preferably at least one detergent tablet, said package being made out of a mono-axially oriented film which is folded and closed by at least one longitudinal seal and two distal seals, the package being characterized in that said film orientation is substantially perpendicular to said longitudinal seal is provided.

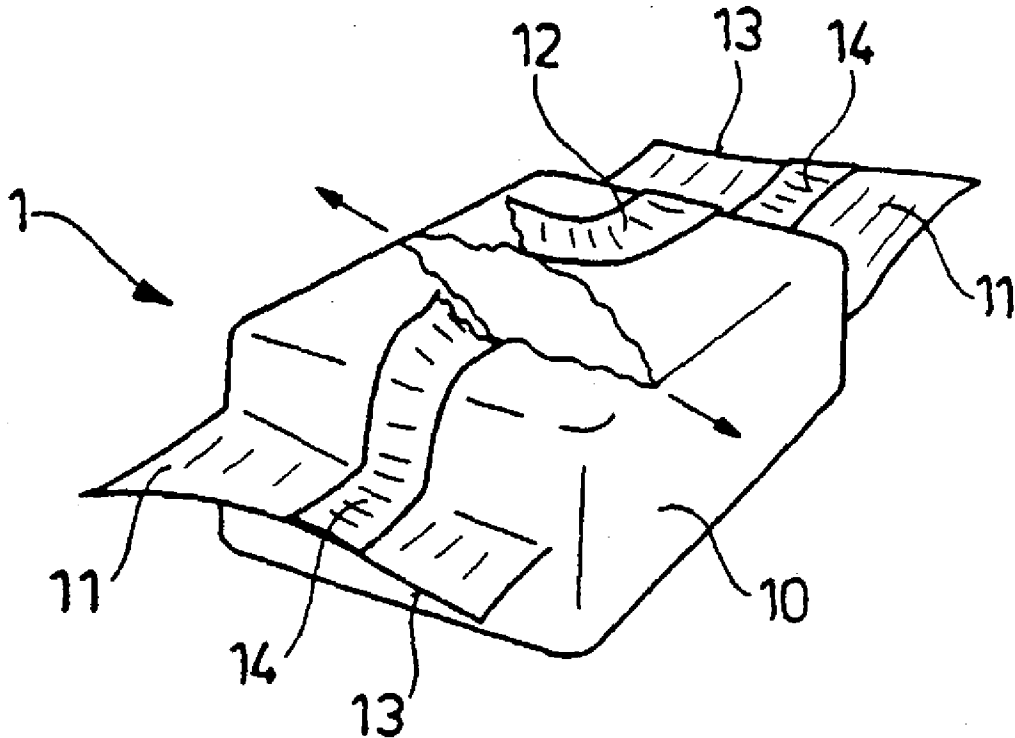


Fig. 1

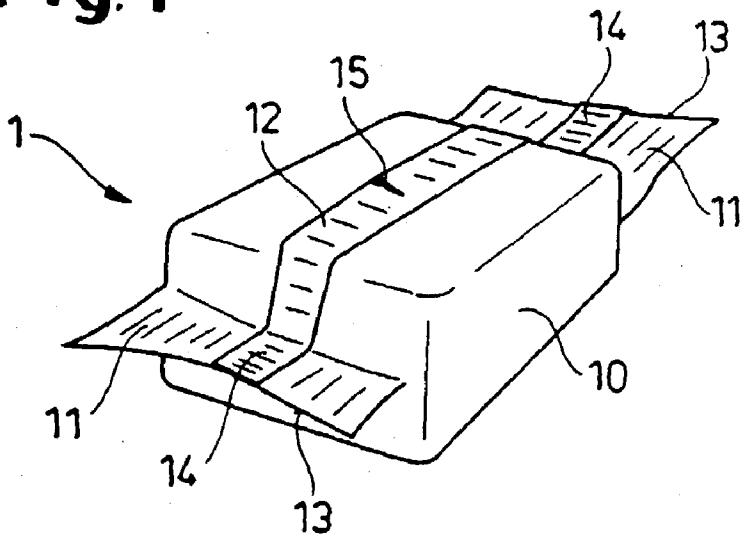
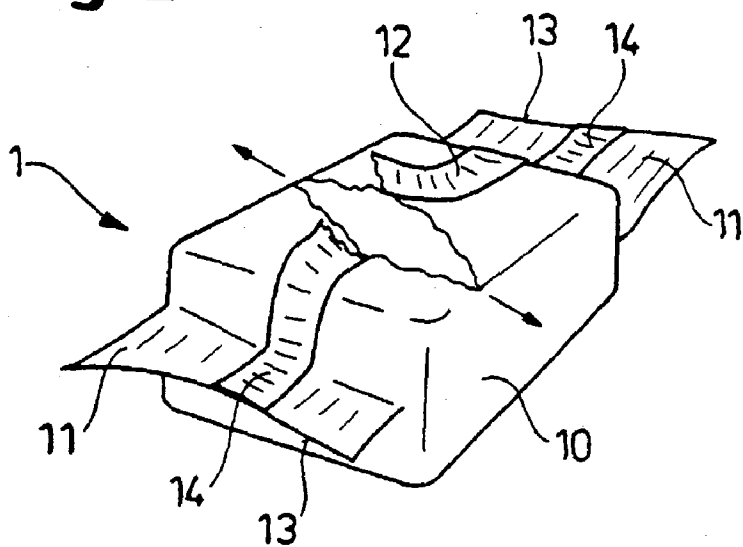


Fig. 2



PACKAGE WITH CHILD DETERRENT MEANS

CROSS REFERENCES TO RELATED APPLICATIONS

[0001] This application is a divisional of U.S. application Ser. No. 09/744,275 filed Jan. 22, 2001 (P&G Case No. CM-1855), which claims the benefit of the filing date of PCT Application Serial No. US99/16137 filed Jul. 16, 1999 (P&G Case No. CM-1855), which claims the benefit of European Patent Convention Application Serial No. 98202479.6 filed Jul. 23, 1998 (P&G Case No. CM-1855F).

FIELD OF THE INVENTION

[0002] The present invention relates to a package for containing tablets of detergent which comprises a child deterrent means.

BACKGROUND OF THE INVENTION

[0003] Flow-wrap unitary packages for containing at least one tablet of detergent are representative of the various packages to which the present invention can apply; such packages are typically made, for example, out of a plastic, or paper-coated film which is folded and longitudinally sealed, so as to form a tube into which at least one unit of a consumer product, for example a detergent tablet is inserted. The tube is then closed at each of its two distal extremities by the means of distal seals which are perpendicular to the longitudinal seal. Furthermore, due to the packing process, the unitary packages are produced from a continuous film, and so they are separated by distal cuttings which are made in the region of the distal sealings.

[0004] Unitary packages for detergent tablets are well known and used in the art. Such unitary flow-wrap packages are typically made as described above. However they present some disadvantages. Flow-wrap packages are widely used in the confectionery industry for packing sweets or snacks, and thus children are used to eat the contents of such packages. However, detergent tablets generally use a composition of chemical compounds that can be dangerous if ingested. This is more particularly true in the case of young children who are more likely to try and open any kind of package, access the tablet and bite/ingest it. Moreover, in the case of young children, the effect of chemicals may be even more damaging for their health.

[0005] Furthermore, the unitary tubes are usually formed from a long roll of film, then filled with one or more tablet(s). They are then sealed and cut to be separated from each other into unitary sachets or packs. The cuttings at the distal ends of one unitary pack usually contain indentations that are to be used by the consumer as facilitating means for the opening by hands. However, such facilitating means also facilitates access to the tablet for the young children, and thus increases the risk of poisoning. One means that has been applied to avoid such poisoning is the use of non-oriented packaging films. Such films are known as being difficult to tear open without using a tool, or without applying a tearing strength such that it that shall be applied only by an adult.

[0006] The international patent application WO 97/02993, published for OLIN Corp. on 30 Jan. 1997 (D1) discloses such a sachet made out of a non-oriented film for providing

child-resistance. Due to non-orientation of its molecules, the film provides good resistance to tearing. The sachet of D1 is further provided with a notch which is located at one of the sachet's distal extremities. By using this notch as a tear-propagating means, an adult user must be able to tear off one corner of the sachet and thereby form a pour spout for dispensing the contents of the sachet.

[0007] However, detergent tablets shall be considered as a common consumer good, and so should be packed in a sachet which is consumer-friendly, and thus easy to open by adults. While providing child deterrence, the packages made out of non-oriented film have proved to remain difficult to open by adults without using a tool, even when they comprise an easy opening means, for example a tear-propagating slit or notch as described above in D1.

[0008] On the other hand, mono-axially oriented films have been used in which then orientation of molecules of polymer helps the user to propagate the tear, thus enabling easy opening of flow-wrapped sachets. Such a package is described in EP 226835A: European application published for Unilever on Jul. 1, 1987, which discloses a flexible material pack having one longitudinal and two transverse "fin" weld seams (i.e., seams where the inside is welded to the inside). The material contains at least one layer of a mono-axially oriented plastic film whose direction of orientation runs along the longitudinal seam; one transverse seam has two tear-off notches on different sides of the longitudinal seam. Such a sachet, while being user-friendly for the opening operation, is clearly not child-resistant, and thus, not suitable for containing dangerous consumer products.

[0009] Thus, there is still a need for a package for packing dangerous consumer products such as, for example, detergent tablets, which features child-deterrence but is adult-consumer friendly.

[0010] It is therefore one main object of the present invention to provide the user with a package for containing units of consumer products to be opened before use of the contents, such as detergent tablets, which is constructed such that it prevents young children from opening, while still being openable by adults without using a tool.

SUMMARY OF THE INVENTION

[0011] The present invention is directed to a package for containing at least one unit of a consumer product, preferably at least one detergent tablet, said package being made out of a mono-axially oriented film which is folded and closed by at least one longitudinal seal and two distal seals, the package being characterized in that said film orientation is substantially perpendicular to said longitudinal seal. In one preferred embodiment of the present invention, the package further comprises rectilinear cuttings at the distal sealed extremities of the package and a notch which is located along the package longitudinal seal. This notch is for use as a tear-propagating means, which allows an adult to initiate a tear along the film and easily open the package thanks to the orientation of the polymer molecules. Most preferably, the longitudinal seal is flat-folded onto the package surface, and must be unfolded before use of the notch.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The invention will now be explained in detail with reference to the following accompanying figures which are referred to as:

[0013] FIG. 1: which is a general perspective view of a parallelepipedic package according to the invention, showing the flat-folded longitudinal seal and the tear-propagating notch located thereonto.

[0014] FIG. 2: which is a general perspective view of a parallelepipedic package according to the invention, showing the longitudinal seal unfolded and the tear-opening which has propagated along the direction of orientation of the film molecules.

DETAILED DESCRIPTION OF THE INVENTION

[0015] Now referring to FIG. 1, a package (1) is shown which comprises a package body (10) and at least two distal ends (11). The package is made out of any suitable film material such as coated paper, metal foil, or plastic film made out of, for example polyethylene or polypropylene, which is mono-axially oriented. The package (1) can be made out of one single material or out of a combination of several materials into a laminate. In such a case, said laminate comprises at least one layer which is mono-axially-oriented, for example the laminate can be made out of at least one layer of a mono-axially oriented film in combination with an aluminium foil. A film is said to be mono-axially oriented when a majority of its constituting polymer molecules are chained along a preferred axis. This polymer construction provides the film with specific mechanical properties. More specifically, such a film tears along the preferred direction which is given by the molecules orientation. On the other hand, tearing the film in a direction substantially perpendicular to the polymer molecules orientation is extremely difficult.

[0016] The package (1) can have any suitable size for containing at least one unit of a consumer product which is considered as dangerous, such as for example detergent compositions, pesticides, insecticides, or medicines. Said unit is either non particulate solids such as tablets or briquettes or bars, or under the form of a powder or granulates, or even under a liquid form. In one preferred embodiment of the present invention, the package (1) is intended to be used for containing at least one detergent tablet for use in laundry or dish-washing purposes. Such tablets are usually considered as dangerous consumer products, if ingested. Said tablet may have any suitable shape, but is preferably symmetrical so as to ensure complete and uniform dissolution in the wash liquor during the wash cycle. The detergent may be of any suitable composition, and may comprise for example surfactants, suds suppressors, bleaches, builders, enzymes, fillers, and perfumes.

[0017] A unit of a consumer product, such as a unit of detergent product is typically defined as a dosed quantity of said detergent suitable for use during one wash cycle. For example, when using an automatic washing machine, for dish or laundry, the user will put one tablet inside the washing machine that will dissolve during the wash cycle, with action onto the dishes or the clothes, for example. However, more than one unit may be used for one wash cycle, for example in extreme dirtiness of items to wash, amount of items to wash, or hardness of water.

[0018] The construction of one embodiment of a package according to the present invention and the use of such a package will now be made, with references the attached FIGS. 1 and 2.

[0019] The package (1) comprises a longitudinal seal (12) which is preferably continuous and extends along the whole length of the package (1). The longitudinal seal (12) has a width comprised within the range of 5 to 20 mm, preferably within the range of 7 to 15 mm. Preferably, the longitudinal seal (12) is flat folded onto the surface of the package (1). More preferably, the adherence of said longitudinal seal (12) onto the surface of the package (1) can be achieved by several ways. For example, it may be sealed by a secondary seal, or it can also be glued, using cold glue or hot-melt glue.

[0020] The package (1) comprises two distal seals (11), as can be seen on FIGS. 1 and 2. Said distal seals (11) preferably extend across the whole width of the package (1), and have a width preferably comprised within the range of 5 to 25 mm, more preferably comprised within the range of 7 to 15 mm. Said distal seals (11) are preferably substantially perpendicular to the longitudinal seal (12). The package (1) further comprises distal cuttings (13) which are rectilinear, and located on the distal border of the distal seals (11) (see FIG. 1). Since the distal cuttings (13) are rectilinear, i.e. no weak point is located along the distal border, it is not possible to initiate a tearing point which could be then extended so as to open the package (1). Furthermore, it is known that most candies are packed in sachets which feature indented distal cuttings, and so children are used to tear such sachets open by using the distal indentations as tear-propagating means. Thus, in the package (1) according to the present invention, the rectilinear distal cuttings (13) constitute a child-deterrent means.

[0021] The package (1) is made out of a mono-axially oriented film as previously defined. The orientation of the polymer molecules in the package is substantially perpendicular to the longitudinal seal (12), and thus preferably parallel to the direction of the distal seals (11). The package (1) comprises cross seals (14) which are created by the intersection of the longitudinal seal (12) with the distal seals (11) (see FIGS. 1 and 2). Such cross seals (14) improve the adherence of the flat-folded longitudinal seal (12) onto the surface of the package (1).

[0022] The package (1) comprises a notch (15) which is to be used as a tear-propagating means. Said notch (15) is located along the length of the longitudinal seal (12). Preferably, said notch (15) is centrally positioned along the length of the longitudinal seal (12), as shown in FIG. 1. Furthermore, said notch (15) has a length which is comprised within the range of 1 to 75% of the longitudinal seal (12) width, and more preferably comprised within the range of 25 to 50% of the longitudinal seal (12) width.

[0023] In a preferred embodiment of the present invention, the child-deterrence is best achieved by combining a mono-axially oriented film with rectilinear distal cuttings (14). In a more preferred embodiment of the present invention, and so as to provide easy opening by adults, the package (1) combines a mono-axially oriented film with rectilinear distal cuttings (14), and a tear-propagated notch (15) which is located along the longitudinal seal (12), said longitudinal seal (12) being flat-folded onto the package (1) surface. In the latter embodiment, the child deterrence is achieved since it is not obvious for young children to unfold the flat-folded longitudinal seal (12), find the notch (15) and exert coordinated shearing movements to propagate the tearing along the film orientation, so as to finally tear the package wide open and access the contents.

[0024] The present invention is applicable to packages suitable for packing a dose of a dangerous consumer product, which are made out of a film closed by sealings, and more preferably, a flow-wrapped package.

[0025] The process of making such flow wrap packages is well-known and used by those skilled in the art. Such a process typically comprises for example, the steps of forming a tube from a roll of film, making a longitudinal sealing (12) along the great length of the film, so as to create a tube, seal and cut in a first portion all along the width of the tube so as to create a pocket into which the contents is introduced. Finally, a second portion of the tube is sealed and cut so as to close and detach a unitary package that comprises the longitudinal sealing (12) and two distal sealed extremities (11). It is obvious that variations of this process are well known and used in the art of making flow wrap packages, depending for example on the nature of the contents. For example, powders, or liquids are most preferably filled in a tube that is vertically formed, filled and sealed, while solid contents is generally fed in a tube that is vertically formed filled, and sealed. Further, the overall shape of the package (1) may vary, for example the package (1) can be parallelepipedic, when the distal sealed extremities (11) are parallel (i.e. located along the same plane), as shown in FIG. 2. In another example, the shape of the package (1) is tetraedric, when the distal sealed extremities (11) are located in perpendicular planes.

[0026] The sealings, either the longitudinal one, or along the distal extremities of the package can be made by the means of heat sealing, or by cold sealing. Cold sealing is performed by using the properties of the packaging film to stick onto itself, or by using a cold glue with excellent tacking properties, so that no heat is required for the sealing, but only pressure applied by the sealing jaws. Both cold and heat sealing are well known in the art. Any other suitable sealing process shall be applied such as for example ultrasonic sealing. It is possible to adapt the quality of a sealing, depending on the use that is to be made of said sealing. Variations shall be dosed and applied during the sealing operation, by modifying for example the time, temperature or pressure of the sealing jaws onto the film, or the surface of the sealings as well. For example, some sealings are made such that it is easy to peel them off (i.e., delaminate them) for easy opening of the package. However, it is not the purpose of the present description to give the appropriate parameters for achieving such sealings, since such parameters can be dosed and applied by a person skilled in the art. Furthermore, it can be understood from the present description, that the package according to the invention is preferably to be opened by tearing the packaging film along one preferred direction, and not by peeling the seals off. Thus, the seals, either the longitudinal or the distal ones, must be made as strong as possible.

What is claimed:

1. A method for using a child-resistant package comprising a mono-axially oriented film for containing at least one unit of a dangerous, solid or liquid consumer product comprising a detergent composition in an automatic washing machine, the steps of said method comprising the steps of:

- a. providing articles in need of cleaning in an automatic washing machine
- b. providing said package being made out of a mono-axially oriented film which is folded and closed by at least one longitudinal seal and two distal seals, wherein the package being characterized in that said film orientation is substantially perpendicular to said longitudinal seal, wherein said longitudinal seal is flat-folded onto the package surface;
- c. opening said package; and
- d. delivering said unit of said product to said automatic washing machine.

2. A method according to claim 1, wherein said package comprises at least one notch located along the longitudinal seal.

3. A method according to claim 2, wherein said notch is centered along the length of the longitudinal seal.

4. A method according to claim 2, wherein said notch is oriented substantially perpendicularly to the direction of the longitudinal seal.

5. A method according to claim 2, wherein said notch has a length comprised within the range of about 1 to about 50% of the longitudinal seal width.

6. A method according to claim 1, wherein said film for the package comprising at least one layer of a material with mono-directional tear properties, said layer being oriented perpendicularly to the package longitudinal seal.

7. A method according to claim 1, wherein said package is a flow-wrapped.

8. A method according to claim 1, wherein said consumer product is a detergent tablet.

9. A method according to claim 8, wherein said detergent tablet comprises a component selected from the group consisting of surfactant, suds suppressors, bleaches, builders, enzymes, fillers, perfume, and mixtures thereof.

10. A method according to claim 1, wherein said opening step further comprises the steps of:

- a. unfolding the flat-folded longitudinal seal;
- b. finding the notch;
- c. exerting coordinated shearing movements to propagate the tearing along the film orientation;
- d. tearing the package wide open; and
- e. accessing the contents.

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