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(54) **Food product packaging**

Lebensmittelverpackung

Emballage pour denrées alimentaires

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- **PATENT ABSTRACTS OF JAPAN vol. 1995, no. 03, 28 April 1995 (1995-04-28) & JP 6 345879 A (OSAKA SHINKU KOGYO KK), 20 December 1994 (1994-12-20)**

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Description

Field of Application

[0001] The present invention relates, in its more general aspect, to the technical field of food packaging.

[0002] In particular the invention relates to a packaging for containing a fluid or liquid food product sensitive to light radiation, such as for example milk or fruit juice.

Prior Art

[0003] In the field of food packaging the need of guaranteeing a correct preservation of the product is particularly felt.

[0004] The expression "correct preservation" here is used to indicate that the food product, during the period of time that passes between packaging and consumption, preserves its nutritional properties and organoleptic characteristics at best.

[0005] In the case of a fluid or liquid food product sensitive to light radiation, such as for example milk, yoghurt or fruit juice, undesired phenomena of degradation can be induced in the product due to exposure to the above radiation.

[0006] In particular, the light radiation can generate two types of effect:

Photochemical effect

[0007] In the sun light violet and ultra-violet radiations, i.e. those having low wavelength and thus high energy, are the more efficient; they have enough energy to activate some molecules of the food product which determine undesired chemical reactions.

[0008] Obviously, different products have different sensitivities to degradation through light radiation due to the different absorbing power for the considered radiation the molecules of the product itself do have.

Ionizing effects

[0009] Ionization is the formation of ions through subtraction of electrons from the atoms of the molecules which are struck by the light radiation as target.

[0010] The ionizing radiations perform an action on the food product similar to that of the ultra-violet rays; the extension of the action depends on the radiation energy.

[0011] The above degradation phenomena, i.e. the alterations of the product, can be thus linked to the amount of light (light intensity and exposure duration) to which the product is exposed, to the wavelength of the light radiation, to the exposure temperature besides, as already said, the absorbing power for the considered radiation which the molecules of the product itself do have.

[0012] In milk, in particular, greater alterations are found for exposures to radiations having wavelength lower than 550 nm.

[0013] Additionally, products destined to a long shelf-life, such as for example UHT milk or long-life milk, can be subjected to oxidation reactions which, although developing more slowly than the degradation induced by light, bring about an undesired alteration of the taste.

[0014] The packaging, thus, in order to ensure a correct preservation of the product contained therein, also has to guarantee a good resistance to the passage of oxygen.

[0015] The known technique for packaging a food product of the type here considered provides several solutions.

[0016] The more recurrent one is that of adopting polycoupled containers, i.e. made of more layers of different material, of which at least one is opaque to light.

[0017] The more known example is that of Tetra Pak® containers wherein, between a polyethylene film and a cardboard layer, an aluminium sheet is interposed having the function of protecting from light radiation.

[0018] A packaging of this type is obtained by welding the polycoupled material, and it can be realised without opening, also the access to the product contained therein takes place, in this case, by cutting a corner of the container of the packaging or by providing the packaging with a closing with a small cap or a tab.

[0019] Although advantageous under several aspects, a solution of this type has some drawbacks, the main of which are given by, if the packaging lacks a closing system, the impossibility of closing the packaging once it has been opened and the consumption of the product has started, or by the compromised versatility of the packaging ensured by the same closing system.

[0020] The process of separation, for a subsequent recycling, of the different materials used for realising the packaging is also complex.

[0021] Among containers of the bottle type, the more used packages for protecting the food product from light radiation

are those made of more layers of plastic material having different characteristics and colours, generally a light colour for the external layers and black for the more internal layer, which constitutes the barrier-to-light system.

[0022] Those bottles realised by co-extruding and blowing high density polyethylene (HDPE) or bottles of polyethylene terephthalate (PET) obtained starting from multilayer pre-moulds wherein colourings and/or additives are added to the PET polymer belong to this type of bottles.

[0023] Although meeting the aim, also packages of this type are not exempt from having drawbacks.

[0024] Besides the poor barrier to oxygen given by polyethylene, the main limit of these packages stays in their layered structure which makes them particularly difficult to be realised; in particular the method for obtaining layered pre-moulds is complex, besides being expensive.

[0025] In this regard, it is to be observed that the public of consumers pay particular attention to the cost of those food products, such as milk, considered as of first need.

[0026] It results that, preferably, a packaging destined to contain such a product must have a realisation cost which does not account, for a considerable percentage, on the cost of the product.

[0027] Thus, preferably, the packaging must be structurally simple so as to ensure a low-cost manufacture thereof.

[0028] It is further to be observed that for containing milk and similar widely consumed food products, packages having a low environmental impact are considerably preferred by the public of consumers and meet the European directions in the field, i.e. packages realised through an eco-efficient method and being partially or wholly recyclable at the end of their use.

Summary of the invention

[0029] The technical problem underlying the present invention is that of devising a packaging for containing a fluid or liquid food product with such characteristics as to overcome the cited drawbacks, i.e. such as to provide a high protection from ultra-violet radiation and a high resistance to the passage of oxygen, thus guaranteeing a prolonged shelf life and which is in the meantime particularly simple from the structural point of view, as well as cheap and eco-efficient.

[0030] The above problem is solved, according to the present invention, by a packaging for food products as defined in claim 1. The invention also consists in the use of a thermoshrinking film as defined in claim 9 and in a method as defined in claim 12.

[0031] A packaging according to the preamble of claim 1 is disclosed in FR-A-2575137.

[0032] Further, preferably, the above film of plastic material is metallized on the sole side facing the above wall of this container.

[0033] Further, advantageously, the above metallized film covers the side wall of the container and it can possibly extend to cover at least one portion of the above closing cap and at least one portion of the above bottom.

[0034] Preferably, the above metallized film comprises an aluminium layer on the above side facing the side wall of the container, this aluminium layer having a thickness comprised between 10 nm and 20 nm, preferably 15 nm.

[0035] In a varying embodiment, the packaging according to the present invention further comprises a lid of plastic material opaque to light radiation associated with the above bottom of the container and peripherally equipped with an edge projecting on top for covering a lower end portion of the above side wall of the container.

[0036] Advantageously, this film is made in the form of a sleeve and it is applied by putting the sleeve on the container and by subsequently inducing the sleeve shrinking through exposure to heat.

[0037] The advantages and characteristics of a packaging for fluid or liquid food products according to the present invention will be more apparent from the following description of an embodiment thereof given by way of indicative, non limiting example with reference to the annexed drawings.

Brief description of the drawings

[0038] In these drawings:

Figure 1 schematically shows a perspective view of a packaging for food products according to the invention.

Detailed description

[0039] With reference to figure 1, a packaging for containing a fluid or liquid food product sensitive to light radiation according to the present invention is globally indicated with 1.

[0040] Packaging 1 essentially comprises a container 2 of plastic material, substantially bottle-like shaped having a vertical X-X axis, a side wall 3 extending between a mouth 4 closed by a respective cap 5 and a bottom 6, and a film 7 of plastic material externally tied to this side wall 3.

[0041] According to a first characteristic of the present invention, this film 7 of plastic material is a metallized film.

[0042] The expression metallized film is here used to indicate a film of plastic material whereon, on the side facing the side wall 3 of the container 2, a reduced amount of a powder of a metal is deposited to form a metal layer with a thickness of a few hundredths of micron, not excluding however the possibility of providing such a layer on the other side or on both sides of the film.

[0043] This metal layer is a layer sufficient to make the film opaque to light radiation and it is preferably an aluminium layer having a thickness comprised between 10 nm and 20 nm, more preferably 15 nm.

[0044] Further, the above metallized film 7 is of the so-called thermoshrinking type.

[0045] The expression thermoshrinking film means a film which shrinks when it is subjected to heating.

[0046] According to a further characteristic of the invention, the above container 2 and the above film 7, in packaging 1, are made of the same plastic material.

[0047] In packaging 1, film 7, externally tied to the side wall 3, extends, along the vertical direction of the container 2, for a section of prefixed length.

[0048] In particular, the length of said section is only slightly lower than the height of the container 2.

[0049] As a consequence, the side wall 3 of the container 2 is substantially entirely covered by the metallized film 7, except from a limited upper end portion 3a, whereon the film does not extend.

[0050] Cap 5 of packaging 1 covers however this limited upper end portion 3a and it is in turn covered on bottom by film 7, which thus advantageously constitutes a warranty seal.

[0051] A packaging 1 for containing long life milk according to a preferred embodiment of the invention is now described.

[0052] Such a packaging 1 is obtained starting from a pre-mould and from a film made of the same plastic material, in particular polyethylene terephthalate.

[0053] From the pre-mould, of 29 grams in weight comprising an additive absorbing ultra-violet radiation, subsequently to blowing, a substantially bottle-like shaped container 2 is obtained comprising a side wall 3 and having a vertical X-X axis.

[0054] From the film of the so-called thermoshrinking type, through a conventional metallization process, a metallized film 7 is obtained by depositing some aluminium powder on one side thereof.

[0055] The aluminium layer thus formed on this side has a thickness in the order of the hundredths of micron and it is selectively deposited on this side of the film, so that this latter in correspondence of an end portion thereof along the vertical direction lacks this aluminium or metallization layer.

[0056] The film is thus made in the form of a sleeve through welding along this portion lacking metallization.

[0057] The above portion, however, in the welding overlaps a metallized portion of the film, so that a totally metallized sleeve results.

[0058] The sleeve of metallized film is thus put on the container 2, upon filling of this latter with long life milk and closing thereof with a respective cap 5 of plastic material.

[0059] In particular, the sleeve of metallized film 7 is put on the container 2 by making the metallized side face the side wall 3 of the container 2.

[0060] At this point, the metallized film 7 and the container 2 are subjected to thermal treatment through heating in a steam oven.

[0061] During the above thermal treatment film 7 is tightly merged in the container 2.

[0062] In particular, further to heating, the thermoshrinking film 7 undergoes a shrinking or contraction in size; at the end of the thermal treatment it tightly adheres to the side wall 3 of the container 2.

[0063] In order to evaluate if the packaging according to the present invention guarantees a correct preservation of the food product contained therein, several comparative tests have been carried out.

[0064] These tests have been carried out on the same food product: UHT milk, packaged and contained in packages according to the present invention and respectively in packages of Tetra Pak® of equal capacity equal to 1 litre.

[0065] The tests have been carried out on the examined samples for periods of time of preservation of 15, 30, 45, 60, 75, 90 and 105 days on packages conditioned at the temperature of 23°C.

[0066] In the analyses carried out through the tests the content of the following vitamins has been determined:

Vitamin A

Vitamin E

Vitamin B1

Vitamin B2

Vitamin B3

Vitamin B5

and of the following proteins:

Alpha Casein

Beta Casein

Kappa Casein

Beta Lactoglobulin

Alpha Lactoglobulin + AY53

Peptide A

[0067] The comparative results of the values found in the preservation test are reported in the herebelow tables, wherein the reference acronyms PETm and Brik indicate a packaging according to the present invention and respectively a Tetra Pak® packaging.

[0068] From the tables it is evinced that, for all the examined aspects, no meaningful differences have been found.

Vitamin A (μg/ 100g)	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	45	64	59	48	48	65	69
BRIK	45	63	57	55	57	47	52

Vitamin E (mg/100g)	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	0.059	0.062	0.060	0.053	0.056	0.065	0.055
BRIK	0.054	0.067	0.055	0.069	0.062	0.044	0.052

Vitamin B1 (mg/100g)	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	0.04	0.04	0.04	0.04	0.04	0.04	0.02
BRIK	0.04	0.04	0.04	0.04	0.03	0.04	0.02

Vitamin B2 (mg/100g)	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	0.16	0.16	0.16	0.15	0.15	0.17	0.19
BRIK	0.17	0.15	0.17	0.16	0.15	0.18	0.16

Vitamin B3 (mg/100g)	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	0.096	0.13	0.14	0.12	0.16	0.13	0.15
BRIK	0.10	0.13	0.14	0.12	0.14	0.14	0.16

Vitamin B5 (mg/100g)	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	0.32	0.38	0.34	0.28	0.40	0.44	0.39
BRIK	0.35	0.39	0.32	0.45	0.40	0.45	0.40

Alpha Casein %	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	35	35	37	35	36	36	36
BRIK	35	35	35	34	34	34	34

Beta Casein %	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	22	22	21	23	22	21	22
BRIK	23	21	22	20	21	18	20

Kappa Casein %	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	12	13	13	13	13	13	13
BRIK	13	14	12	14	13	15	14

Beta Lactoglobulin %	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	21	20	21	20	20	21	20
BRIK	18	19	18	20	20	19	20

Alpha Lactoglobulin + AY53 %	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	8	7	8	8	8	8	8
BRIK	8	9	8	9	8	9	8

Peptide %	15 gg	30 gg	45 gg	60 gg	75 gg	90 gg	105 gg
PETm	2	3	2	2	3	3	3
BRIK	2	2	3	2	2	3	2

[0069] The main advantage of the packaging according to the present invention stays in the combined achievement of a high protection from light radiation and a high resistance to the passage of oxygen.

[0070] In this way, a correct preservation and a prolonged shelf life is guaranteed for the food product contained in the packaging according to the invention.

[0071] Film 7 of plastic material, due to the metal layer on at least one side thereof, protects the container 2 of packaging 1 and thus the product contained therein from light radiation capable of causing undesired degradation reactions, especially degradation of the vitamins and proteins in the food product.

[0072] The container 2 of plastic material guarantees a high resistance to the passage of oxygen, having good barrier properties with respect to gas.

[0073] Moreover, the manufacture of the container 2 and of the film 7 with the same plastic material is particularly advantageous both from the economical and ecological point of view.

[0074] And further, given the extremely limited thickness of the metallization on film 7, the entire packaging 1 can be considered as realised with a single material, the amount of metal contained therein being negligible.

[0075] This aspect makes it more efficient the recuperation and reuse of the recyclable material in the packaging.

[0076] In this regard, it is useful to underline how the use of polyethylene terephthalate for realising the container 2 and the film 7 makes the packaging according to the present invention totally recyclable.

[0077] Polyethylene terephthalate, in fact, is a thermoplastic polyester easily reusable which can be employed both

in the manufacture of bottles and various containers and in a different field such as for example in the field of fibres to realise fabrics, packages and similar products.

[0078] It is also to be said that the use of polyethylene terephthalate is economically advantageous since its cost is very competitive with respect to other materials used in similar applications.

[0079] Further, polyethylene terephthalate easily allows to realise manufactures of good quality, i.e. packages well defined by well arranged details.

[0080] This latter aspect has a positive influence both on the functionality of packaging 1 - e.g. it allows the realisation of an effective coupling between the cap 5 and the container 2 - and on the aesthetic aspect of packaging 1 making it particularly pleasant.

[0081] Obviously, a skilled in the art will be allowed to apply several modifications and variations to the above described invention.

[0082] For example packaging 1 can comprise, in order to entirely cover the bottom of the container 2, a lid of plastic material opaque to light radiation associated with the above bottom 6 of the container 2, for example by fitting it thereon.

[0083] Preferably, the above lid of plastic material can be provided peripherally equipped with an edge projecting on top covering a lower end portion of the side wall 3 of the container 2.

[0084] A skilled in the art, in order to meet specific, contingent needs, will be allowed to add other variations and modifications to those of the packaging according to the present invention, all within the scope of protection of the invention as defined in the following claims.

Claims

1. A packaging (1) for fluid or liquid food products sensitive to oxygen and light radiation comprising a container (2) of plastic material including a bottom (6), a side wall (3), a mouth (4), a cap (5) closing said mouth (4) and a film (7) of plastic material, said film (7) being externally tied to the side wall (3) of said container (2) by its being thermoshrunk onto the container (2), **characterised in that** said container (2) is made of polyethylene terephthalate (PET) and **in that** said film (7) is composed of polyethylene terephthalate metallized on at least one side thereof.

2. A packaging according to claim 1 , wherein said film (7) is metallized on one side only, said side facing the side wall (3) of said container (2).

3. A packaging according to claim 1 or 2, wherein said metallized PET film is obtained by depositing metal powder onto a PET film.

4. A packaging according to claim 3, wherein said metal powder is aluminium powder.

5. A packaging according to claim 4, wherein said aluminium powder forms a layer with a thickness comprised between 10 nm and 20 nm.

6. A packaging according to any of the preceding claims, wherein said metallized PET film (7) substantially covers said side wall (3) entirely and optionally at least one portion of said closing cap (5) and at least one portion of said bottom (6) of the container (2).

7. A packaging according to any of the preceding claims, further comprising a lid of plastic material opaque to light radiation associated with the bottom (6) of the container (2), said lid being peripherally equipped with an edge projecting on top for covering a lower end portion of said side wall (3) of the container (2).

8. A Packaging according to any of preceding claims, wherein the polyethylene terephthalate which said container (2) is made of comprises an ultra-violet radiation-absorbing additive.

9. Use of a thermoshrinking film (7) composed of polyethylene terephthalate (PET) and metallized on at least one side thereof, to coat a container (2) made of polyethylene terephthalate for a fluid or liquid food product sensitive to oxygen and light radiation, in order to protect said product against oxidation reactions and light radiation, wherein said film (7) is thermoshrunk onto said container (2).

10. Use according to claim 9, wherein said food product is milk.

11. Use according to claim 10, wherein said food product is UHT milk.

12. A method for obtaining a packaging (1) for a fluid or liquid food product sensitive to oxygen and light radiation, comprising the application on a side wall (3) of a container (2) made of polyethylene terephthalate and filled in with said product of a metallized thermoshrinking film (7) composed of polyethylene terephthalate (PET) on which metal powder has been deposited on at least one side thereof, by thermoshrinking said film (7) onto said container (2) to confer protection to said product against oxidation reactions and light radiation.

13. A method according to claim 12, wherein said film (7) is made in the form of a sleeve and it is applied by fitting said sleeve onto said container (2) and by subsequently inducing the shrinking of the sleeve further to exposure to heat.

Patentansprüche

1. Verpackung (1) für fluidförmige oder flüssige Nahrungsmittelprodukte, die empfindlich auf Sauerstoff und Lichtstrahlung reagieren, mit einem Behälter (2) aus Kunststoffmaterial, der einen Boden (6), eine Seitenwand (3), eine Öffnung (4), eine die Öffnung (4) verschließende Kappe (5) und eine Folie (7) aus Kunststoffmaterial umfasst, wobei die Folie (7) außen auf die Seitenwand (3) des Behälters (2) aufgezogen ist, indem sie auf den Behälter (2) über Wärmeeinwirkung aufgeschrumpft wird, **dadurch gekennzeichnet, dass** der Behälter (2) aus Polyethylenterephthalat (PET) hergestellt ist und die Folie (7) aus Polyethylenterephthalat besteht, das auf wenigstens einer Seite metallisiert ist.

2. Verpackung nach Anspruch 1, wobei die Folie (7) nur auf einer Seite metallisiert ist, und zwar auf der Seite, die der Seitenwand (3) des Behälters (2) zugewandt ist.

3. Verpackung nach Anspruch 1 oder 2, wobei die metallisierte PET-Folie erhalten wird, indem Metallpulver auf einer PET-Folie abgeschieden wird.

4. Verpackung nach Anspruch 3, wobei das Metallpulver Aluminiumpulver ist.

5. Verpackung nach Anspruch 4, wobei das Aluminiumpulver eine Schicht mit einer Dicke zwischen 10 nm und 20 nm bildet.

6. Verpackung nach einem der vorhergehenden Ansprüche, wobei die metallisierte PET-Folie (7) die Seitenwand (3) im Wesentlichen vollständig bedeckt und optional wenigstens einen Teilbereich der Verschlusskappe (5) und wenigstens einen Teilbereich des Bodens (6) des Behälters (2).

7. Verpackung nach einem der vorhergehenden Ansprüche, darüber hinaus einen Deckel oder eine Scheibe aus Kunststoffmaterial umfassend, der/die für Lichtstrahlung undurchlässig ist, die dem Boden (6) des Behälters (2) zugeordnet ist, wobei der Deckel über den Umfang mit einem nach oben vorstehenden Rand ausgestattet ist, um einen unteren Endabschnitt der Seitenwand (3) des Behälters (2) zu bedecken.

8. Verpackung nach einem der vorhergehenden Ansprüche, wobei das Polyethylenterephthalat, aus dem der Behälter (2) hergestellt ist, einen Zusatzstoff enthält, der UV-Strahlung absorbiert.

9. Verwendung einer Wärmeschrumpffolie (7), die aus Polyethylenterephthalat (PET) besteht und auf zumindest einer Seite metallisiert ist, um einen aus Polyethylenterephthalat hergestellten Behälter (2) für ein fluidförmiges oder flüssiges Nahrungsmittelprodukt zu überziehen, das empfindlich auf Sauerstoff und Lichtstrahlung reagiert, um das Produkt vor Oxidationsreaktionen und Lichtstrahlung zu schützen, wobei die Folie (7) auf den Behälter (2) mittels Wärmeeinwirkung aufgeschrumpft wird.

10. Verwendung nach Anspruch 9, wobei das Nahrungsmittelprodukt Milch ist.

11. Verwendung nach Anspruch 10, wobei das Nahrungsmittelprodukt H-Milch ist.

12. Verfahren zum Erhalten einer Verpackung (1) für ein fluidförmiges oder flüssiges Nahrungsmittelprodukt, das empfindlich auf Sauerstoff und Lichtstrahlung reagiert, das eine Applikation auf einer Seitenwand (3) eines aus Polyethylenterephthalat hergestellten und mit dem Produkt befüllten Behälters (2) hat, wobei die Applikation eine metallisierte Wärmeschrumpffolie (7) ist, die aus Polyethylenterephthalat (PET) besteht, auf dem zumindest auf einer Seite Metallpulver abgeschieden wurde, durch ein mittels Wärmeeinwirkung stattfindendes Aufschrumpfen der Folie

(7) auf den Behälter (2), um dem Produkt gegenüber Oxidationsreaktionen und Lichtstrahlung Schutz zu verleihen.

13. Verfahren nach Anspruch 12, wobei die Folie (7) in Form einer Manschette hergestellt und diese aufgebracht wird, indem sie auf den Behälter (2) aufgestülpt und anschließend das Schrumpfen der Manschette durch Wärmeeinwirkung herbeigeführt wird.

Revendications

1. Emballage (1) pour produits alimentaires fluides ou liquides sensibles à l'oxygène et au rayonnement lumineux, comprenant un récipient (2) de matière plastique comprenant un fond (6), une paroi latérale (3), une embouchure (4), un bouchon (5) fermant ladite embouchure (4) et un film (7) de matière plastique, ledit film (7) étant lié à la paroi latérale (3) dudit récipient (2) en étant thermorétracté sur le récipient (2), **caractérisé en ce que** ledit récipient (2) est composé de polytéréphtalate d'éthylène (PTE) et **en ce que** ledit film (7) est composé de polytéréphtalate d'éthylène et est métallisé sur au moins une de ses faces.

2. Emballage selon la revendication 1, dans lequel ledit film (7) est métallisé sur une face uniquement, ladite face faisant face à la paroi latérale (3) dudit récipient (2).

3. Emballage selon la revendication 1 ou 2, dans lequel ledit film de PTE métallisé est obtenu en déposant une poudre de métal sur un film de PTE.

4. Emballage selon la revendication 3, dans lequel ladite poudre de métal est de la poudre d'aluminium.

5. Emballage selon la revendication 4, dans lequel ladite poudre d'aluminium forme une couche avec une épaisseur comprise entre 10 nm et 20 nm.

6. Emballage selon l'une quelconque des revendications précédentes, dans lequel ledit film de PTE métallisé (7) recouvre sensiblement entièrement ladite paroi latérale (3) et de manière facultative au moins une partie dudit bouchon de fermeture (5) et au moins une partie dudit fond (6) du récipient (2).

7. Emballage selon l'une quelconque des revendications précédentes, comprenant en outre un couvercle de matière plastique opaque au rayonnement lumineux et associé au fond (6) du récipient (2), ledit couvercle étant équipé sur sa périphérie d'un bord faisant saillie sur le dessus et destiné à recouvrir une partie d'extrémité inférieure de ladite paroi latérale (3) du récipient (2).

8. Emballage selon l'une quelconque des revendications précédentes, dans lequel le polytéréphtalate d'éthylène dont ledit récipient (2) est composé comprend un additif absorbant les rayonnements ultraviolets.

9. Utilisation d'un film thermorétractable (7) composé de polytéréphtalate d'éthylène (PTE) et métallisé sur au moins une de ses faces, pour revêtir un récipient (2) pour produit alimentaire fluide ou liquide sensible à l'oxygène et au rayonnement lumineux, le récipient étant composé de polytéréphtalate d'éthylène, afin de protéger ledit produit contre les réactions d'oxydation et le rayonnement lumineux, ledit film (7) étant thermorétracté sur ledit récipient (2).

10. Utilisation selon la revendication 9, dans laquelle ledit produit alimentaire est du lait.

11. Utilisation selon la revendication 10, dans laquelle ledit produit alimentaire est du lait U.H.T.

12. Procédé d'obtention d'un emballage (1) pour un produit alimentaire fluide ou liquide sensible à l'oxygène et au rayonnement lumineux, comprenant l'application sur une paroi latérale (3) d'un récipient (2), composé de polytéréphtalate d'éthylène et rempli dudit produit, d'un film métallisé thermorétractable (7) qui est composé de polytéréphtalate d'éthylène (PTE) et sur au moins une des faces duquel a été déposée une poudre métallique, l'application du film étant réalisée en thermorétractant ledit film (7) sur ledit récipient (2), pour conférer une protection audit produit contre les réactions d'oxydation et le rayonnement lumineux.

13. Procédé selon la revendication 12, dans lequel ledit film (7) forme un manchon et est appliqué en adaptant ledit manchon sur ledit récipient (2) et en provoquant postérieurement la rétraction du manchon après exposition à la chaleur.

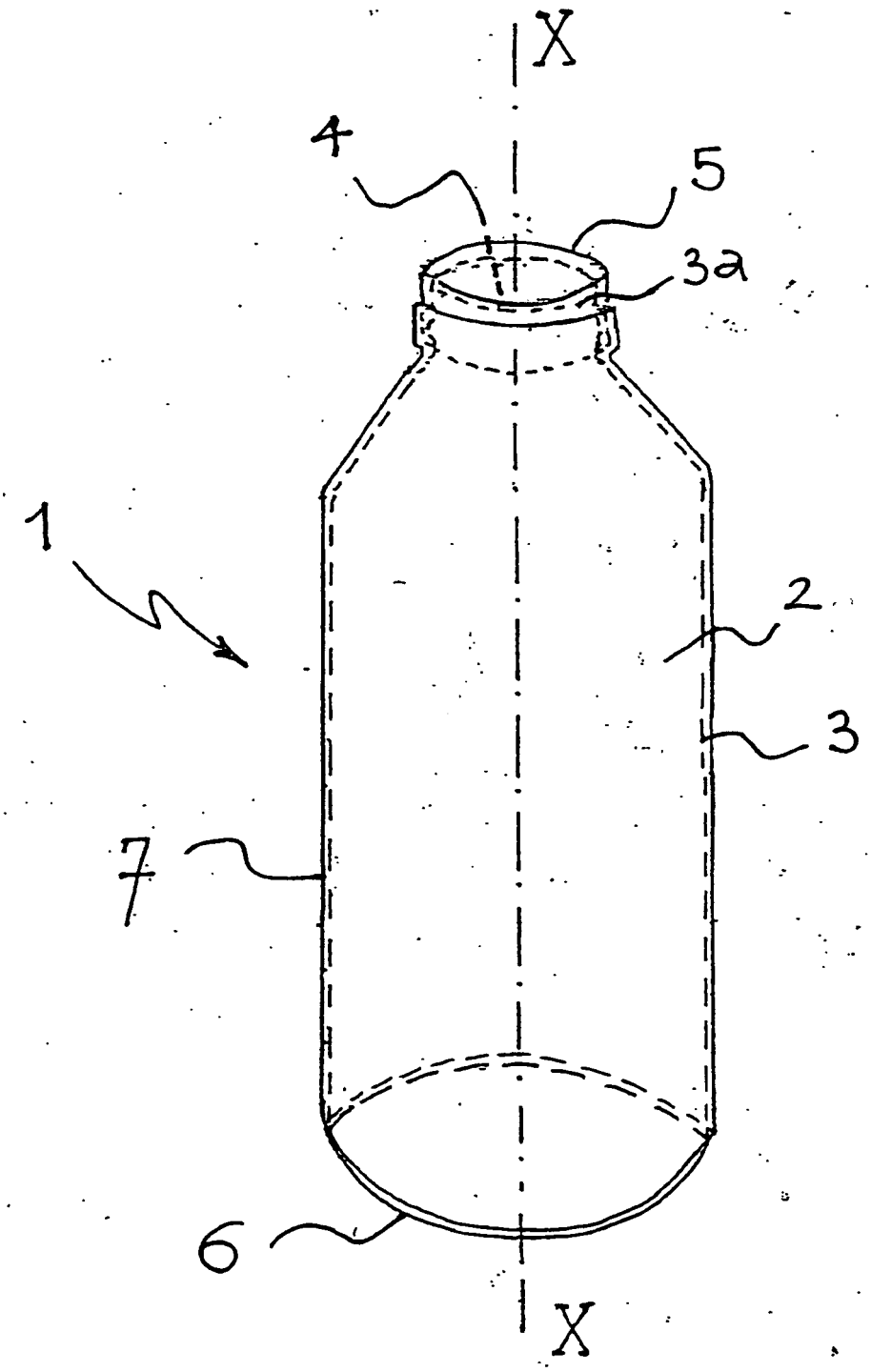

Fig. 1