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(54) Title: A PACKAGE CONTAINER, PACKAGING LAMINATE AND THE USE OF A COLOUR PRINT

(57) Abstract: A flexible packaging container (25a, 25b) of a transparent packaging laminate (10) containing a coloured, liquid food product, the packaging container displaying colour print (28, 29, 30, 31, 32, 34, 35, 36) directly applied on a front (27) and/or rear (33) display surface. At least selected parts of said colour print are a transparent colour print (28, 29, 30, 32, 34, 35) which permits transparency for the food product and that one or more colour shades in the transparent colour print are selected so that the visual impression thereof is enhanced or modified in cooperation with the colour of the food product. The invention also relates to a packaging laminate for the packaging container, as well as use of a colour print on such a packaging laminate.

A PACKAGE CONTAINER, PACKAGING LAMINATE AND THE USE OF A COLOUR PRINT

TECHNICAL FIELD

The present invention relates to a flexible packaging container of a transparent packaging laminate, containing a coloured, liquid food product, the packaging container displaying, on a front and/or rear display surface, a colour print applied directly thereon. The present invention also relates to a packaging laminate for the packaging container, as well as to the use of a colour print on such a packaging laminate.

BACKGROUND ART

There is a growing demand on the market today for packages for beverages and liquid foods of the single-use bag type in plastic, these bags preferably being at least partly, on some region of the package, transparent so that they show to the consumer the contents of the package when they are exposed on the shelf, for example in a food hall. Usually, such packages are provided with a drinking straw so that the consumer may consume the contents direct, or a pull tab for opening and pouring out the contents.

One example of a transparent packaging laminate for such a packaging container is described in PCT/SE2003/001750.

One problem inherent in packaging containers of a transparent and flexible packaging laminate is to be able to provide it with a distinct and clear colour print. According to the prior art technology, attempts have been made to create, by using a subjacent white colour layer, an opaque background for the colour print so that the colour print, in the form of text and/or artwork will be able to show clearly beside portions of the packaging/packaging laminate which lack print and where the product is thus displayed. If however the food product is coloured, its colour has a tendency to show through the subjacent, white, opaque colour layer and the upper colour layer so that the visible impression will be that the text /the artwork is miscoloured and diffuse. As a result, the package with its contents has difficulty in competing on the

shop shelf with, for example, metal foil-based flexible packages showing highly distinct and clear print.

It is, therefore, one object of the present invention to offer a packaging container and a packaging laminate which obviate the above-discussed drawbacks and problems.

It is a further object of the present invention to offer a flexible packaging container of a transparent packaging laminate containing a coloured, liquid food product, the packaging container displaying, on a front and/or rear display surface, a colour print directly applied thereon, the colour print giving a distinct and clear visible impression despite the impact of the coloured food product.

It is yet a further object of the present invention to offer a transparent packaging laminate possessing gas barrier properties which are suitable for aseptically packed and long shelf-life storage, as well as displaying sufficient flexural rigidity to be suitable for the continuous high speed packing of liquid foods by means of a continuous tube forming process and which moreover has a colour print which gives a distinct and clear visible impression even in the packing of a coloured, liquid food product in a packaging container which is produced from the packaging laminate.

BRIEF SUMMARY OF THE INVENTION

The above-outlined objects are attained by offering a flexible packaging container of a transparent packaging laminate containing a coloured, liquid food product, the packaging container displaying, on a front and/or rear display surface, a colour print directly applied thereon, at least selected portions of said colour print being a transparent colour print which permits transparency for the food product and one or more colour shades in the transparent colour print being selected so that the visible impression thereof is enhanced or modified in cooperation with the colour of the food product proper.

The solution to the above-mentioned problems and needs is thus, instead of attempting to counteract the transparency effects of the colour print, for example by applying a white colour layer affording opacity beneath the text/artwork, to utilise the transparency of the colour print in order, in cooperation with the colour of the

food product proper, to give a distinct, clear and attractive visible impression. The visible impression of the colour print can be enhanced or modified by the cooperation with the colour of the food product. Moreover, there will be obtained a three-dimensional effect by the cooperation of the colour of the food product, the transparent packaging laminate and the transparent colour print.

According to one aspect of the present invention, the transparent colour print has an opacity of greater than 3, preferably greater than 4 and more preferably greater than 5. An upper limit is in principle set by the value of a totally transparent film without colour print and, therefore, the opacity level is in practice at most 13, preferably at most 12 and most preferably at most 11. Thus, the value 1 signifies total opacity and the higher the value, the greater will be the transparency. The measurements are carried out using a reflectometer which measures in accordance with ISO 6504/AST E97/DIN 55984 and the opacity is calculated as the relationship between reflectance of a measurement object on a white background to reflectance of the measurement object on a black background with an angle of impingement of 45° and a reflection angle of 0°.

It is thanks to the low opacity and the absence of colour layer affording opacity that the possibility of cooperation with the coloured food product is attained in the selected portions carrying transparent colour print.

According to another aspect of the present invention, the transparent colour print constitutes a background for an artwork- or text print which is disposed on the same display surface. The background, which may be printed with different colour densities, permits the display of the coloured food product in a different and more attractive manner than prior art packages of transparent, flexible packaging laminate where a background is totally absent in order that the food product be visible in the regions between text/artwork.

According to yet a further aspect of the present invention, the transparent colour print is a photographic print. It is to be preferred that this be applied by means of a so-called process or screen printing technique, preferably with varying density between the half tone dots in order to obtain different colour intensities in one and the same artwork or one and the same background to artwork and/or text. Employing

the process/screen technique, the entire colour spectrum can be obtained from four primary subtractive colours, viz. cyan, magenta, yellow and black. However, it is also conceivable to utilise other printing techniques where printing inks are mixed in different shades and are applied. Examples of useable printing techniques are flexo, flexo process, off-set or rotogravure. One advantage is that the application of a transparent colour print is eminently suitable for solvent-free printing inks/techniques, since less ink quantities are consumed for a transparent colour print than for an opaque colour print. The reason for this is that, for creating an opaque colour print with larger ink quantities, solvents are often needed to attain satisfactory results.

According to still a further aspect of the present invention, the transparent colour print forms a complete piece of artwork or part thereof. For example, a fruit, berry or vegetable representative artwork can be formed as a transparent colour print according to the present invention, in which event the visual impression of this printing ink is enhanced or modified in cooperation with the colour of the food product proper.

According to yet a further aspect of the present invention, the front and/or rear display surface may also display colour print which is directly applied thereon in selected areas and which affords opacity, and preferably constitutes a text and/or a piece of artwork and preferably includes a subjacent white colour layer and an upper colour layer. This print will then constitute a substantially opaque piece of artwork and/or text on a background of the transparent colour print according to the present invention.

According to still a further variation, the transparent colour print is applied at least on the front display surface of the package, while a transparent colour print or a transparent or opaque artwork or opaque text print is disposed on its rear display surface, so that the transparent colour print or artwork or text print on the rear display surface clearly appears through both the coloured food product proper, the front display surface and its transparent colour print. As a result, an "aquarium effect" can for example be obtained, or information such as slogans, so-called "fortune cookies" etc. can be read through both the coloured food product, the front display surface and its transparent colour print.

According to still a further aspect of the present invention, said transparent colour print is of the same colour as the food product, but of a different shade, whereby the visual impression of the transparent colour print is enhanced in cooperation with the colour of the food product proper. For example, a visual impression with more life can be obtained from a blue coloured food product in a transparent packaging container with a blue, transparent colour print. If the colour print is moreover photographic and displays different degrees of colour density and/or different shades of blue, water-like effects can, for example, be achieved including bubbles, foam, water swell or the like.

According to yet a further aspect of the present invention, said transparent colour print is of a different colour than the food product, whereby the visual impression of the transparent colour print, in cooperation with the colour of the food product proper, is modified to a third colour. One example is that a yellow food product, such as orange juice, together with a red, transparent colour print of varying colour density, gives an orange visual impression which, for example, may represent the citrus fruit. Another example is that a yellow product in a packaging container with a blue, transparent colour print makes a green visual impression.

The packaging laminate for the package according to the invention preferably includes a gas barrier layer. More precisely, it preferably includes an outside layer of thermosealable olefin polymer, a first gas barrier layer of SiOx, coated on a first polymer carrier layer, and a second gas barrier layer of SiOx, coated on a second polymer carrier layer, as well as an interjacent polymer layer of greater thickness in relation to each one of the surrounding layers which is laminated between the two gas barrier-coated carrier layers. A well functioning packaging laminate of this type is described in PCT/SE2003/001750, whose contents are hereby incorporated herein by reference.

However, the present invention is not restricted to being utilised in connection with such a laminate. For example, it is conceivable to employ a transparent packaging laminate with low gas barrier properties, in which event use is instead made of a preserving agent in the product. Other variations of transparent packaging laminates are also conceivable.

One preferred variation of the package according to the invention consists of a flexible bag which is fold-formed at the bottom, preferably of portion size and with a hole for a drinking straw or an opening arrangement. The packaging container according to the invention is a bag or a "standing bag" or the like and is durable on handling and distribution and resistant to moisture and oxygen gas during long-term storage, because of the high quality packaging laminate, which in turn also imparts a high level of quality to seals and enjoys excellent gas barrier properties. A further crucial advantage in packaging containers produced from the packaging laminate according to the invention is that they withstand boiling or thawing by means of microwaves, as well as retorting.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

Further advantages and advantageous, characterising features of the present invention will be obvious on the basis of the following detailed description and with reference to the accompanying Drawings. In the accompanying Drawings:

Fig. 1 is a cross sectional view of a preferred laminated packaging material according to the present invention; and

Fig. 2 shows one preferred example of a packaging container which has been produced from the packaging laminate according to the present invention.

DETAILED DESCRIPTION OF THE ACCOMPANYING DRAWINGS AND PREFERRED EMBODIMENT

Fig. 1 thus shows a transparent packaging laminate 10 including a first and second carrier layer 11; 12 which are films of a preferably prefabricated film of polyester or polyamide, such as a moulded film or preferably a mono- or biaxially oriented polyethylene terephthalate (PET), polyethylene naphthenate (PEN) or polyamide (PA), on which coatings of a thin gas barrier layer of SiOx 13; 14 have been applied. The SiOx layer is preferably applied by means of plasma enhanced chemical vapour deposition, PECVD, where x = 1.7 – 2.0, of a thickness of from about 50 to about 500 Å, preferably from about 80 to about 300 Å. The two SiOx layers are preferably turned to face towards the interior of the laminate and thus face towards one another.

Between the two carrier layers which are coated with gas barrier layer, an interjacent layer 15 is laminated. The interjacent layer 15 may consist of a relatively rigid olefin polymer, such as, for example, high density polyethylene (HDPE) or polypropylene (PP), or alternatively of a polymer which is soft and/or has elastomeric properties, such as, for example, polyethylene of very low density (VLDPE) or polyethylene of ultra low density (ULDPE). Another alternative is that the interjacent layer 15 consists of a mixture of high density polyethylene (HDPE) and polyethylene of very low density (VLDPE) or polyethylene of ultra low density (ULDPE). Yet a further alternative is that the interjacent layer 15 is built up from at least two, preferably three sublayers of high density polyethylene (HDPE) and polyethylene of very low density (VLDPE) or polyethylene of ultra low density (ULDPE). The interjacent layer is thicker than any of the surrounding layers in the packaging laminate and thereby serves as a spacer element between the two carrier layer films of oriented polymer. However, the thickness of the interjacent layer does not constitute more than from about 30 to about 55 % of the total thickness of the packaging laminate, more preferably from about 35 to about 50 %. Preferably, the thickness of the carrier layers constitutes from about 5 to about 20 %, more preferably from about 5 to about 15 % of the total packaging laminate.

On the outside of the carrier layer 11 that will constitute the outside wall in a packaging container which is produced from the packaging laminate, at least one layer 16 of a thermosealable olefin polymer, preferably a low density polyethylene (LDPE) or a linear low density polyethylene (LLDPE) is applied and also includes so-called metallocen catalysed LLDPE (m-LLDPE), i.e. LLDPE polymers catalysed by means of a single seat catalyst. Other examples of alternative polymers for the outside layer in the packaging wall may be a polyethylene of medium high density (MDPE) or polypropylene (PP).

On the outside of that carrier layer 12 which will constitute the inside wall in a packaging container produced from the packaging laminate, there is applied at least one layer 17 of a thermosealable olefin polymer, preferably a layer of LDPE or more preferably a layer of LLDPE and most preferably a first sublayer 17a of LDPE and a second, outer sublayer 17b of LLDPE.

The outside layers 16, 17 are each applied in a quantity of from about 10 to about 25 μm in order to obtain optimum thermosealing properties in relation to cost efficiency.

For optimal adhesion between the different layers in the packaging laminate, use is preferably made of a tie layer of adhesive polymers, tie layers and primers which are known in the art. Such tie layers and primers are adapted to the specific choices of polymer in the different layers and may be selected from polyolefins and modified polyolefins, preferably polyethylene-based polymers, such as, for example, LDPE and modified LDPE.

In the tie layers 18, 19 between the layers of SiOx 13; 14 and the interjacent polyolefin layer 15, use is preferably made of a polyethylene base polymer which is inoculation modified by means of an unsaturated alkoxy silan compound as described in USPS 5,731,092 which is hereby incorporated herein by reference. See in particular column 1 line 39 to column 3 line 21 and Examples 1 and 2.

Other examples of tie layers are homo- or copolymers of LDPE or inoculated copolymers of polyethylene, inoculated with monomers which include functional groups of carboxyl- or glycidyl type, such as acrylic monomers or maleic acid anhydride monomers (MAH), for example ethylene (meta) acrylic acid copolymers (E(M)AA), ethylene, glycidyl (meta) acrylate copolymers (EG(M)A) or MAH inoculated polyethylene (MAH-g-PE).

Any of the above discussed polymers whatever may also be employed in possible tie layers 20; 21 between the outer, thermosealable polyolefin layers 16; 17 and the polymer carrier layers 11; 12.

The colour print according to the present invention is applied in conjunction to layer 16 of a thermosealable olefin polymer on that side of the packaging laminate which will constitute the outside wall in a packaging container produced from the packaging laminate. Fig. 1 shows three variations of where this colour print can be applied. Furthest to the right is shown the preferred embodiment that the colour print 26a is applied on the tie layer 20 (or direct on the carrier layer 11), whereafter the outside layer 16 is laid thereon. As a result, the colour print is protected against wear etc. by the layer 16. In the central illustration is shown a less preferred variation where the colour print 26b lies outside the outside layer 16. Furthest to the left is

shown yet a further preferred variation where the outside layer 16 consists of two sublayers 16a and 16b, the colour print 26c being applied on the inner 16a of these and the outer 16b of the sublayers is thereafter applied as protection for the colour print. A certain positive, visual gloss-look effect is also obtained by such means.

Fig. 2a and 2b show a preferred example of a packaging container 25 containing a coloured, liquid food product, the packaging container having been produced from the packaging laminate 10 according to the present invention. The packaging container is particularly suitable for small drink packages for direct use by means of a drinking straw or the like. One such packaging container typically has a volume of about 330 ml or less, preferably from about 100 to about 250 ml, for example about 125 ml, 200 ml or about 250 ml. It may be a bag of any configuration whatever, but is preferably cuneiform 21 so that it is simple to handle and dimensionally stable when placed on a shelf in the food hall or on a table or the like. In order to realise such a "cuneiform" configuration, the bottom portion 22 of the package is formed so that the transverse thermoseal 24 in the bottom is concealed under the triangular corner flaps 23 which are folded and sealed against the bottom of the package.

The variation of the packaging container 25a in Fig. 2a has a colour print directly applied on the packaging container on a front display surface 27, the colour print including artwork, for example in the form of an orange 28 with leaves 29, a background 30 and a text 31. In the example, the orange artwork 28 is a transparent colour print according to the invention, suitably in a red shade. When the contents, an orange juice, is yellow the visual impression of the artwork 28 will be modified to become orange, in cooperation with this yellow orange juice. The orange leaves 29 are formed from a transparent colour print according to the invention, suitably in a blue shade. When the contents are, as was mentioned above, yellow, the visual impression of the artwork 29 will be modified in cooperation with this yellow orange juice, so that the orange leaves appear as green.

The background 30 is also formed from a transparent colour print according to the invention, for example with a yellow shade which is enhanced/intensified in cooperation with the yellow contents of the packaging container.

On the other hand, the text 31 on the packaging container 25a is made from a colour print affording opacity, preferably including a subjacent white colour layer as well as an upper colour layer.

A hole 37 for a drinking straw is also shown on the packaging container 25a.

The variation of the packaging container 25a in Fig. 2a also has a colour print 32 applied directly on the packaging container on a front display surface 27, the colour print being a transparent colour print according to the invention, in this case with a blue shade and representing waves and bubbles. When the contents of the packaging container 25b are blue, the visual impression of the colour print will be enhanced/intensified in cooperation with these contents.

On the rear display surface 33 of the packaging container, there is disposed artwork 34, in this case a starfish which may be of opaque character and which clearly appears through both the coloured food product, the front display surface 27 and its transparent colour print 32. The background 35 to the artwork 34 is also disposed on the rear display surface 33 and may consist of a transparent colour print according to the present invention, or may be a colour print of an opaque character which is also seen through both the coloured food product, the front display surface 27 and its transparent colour print 32, which can give an "aquarium-like" effect. There may possibly be provided a text 36 on the rear display surface 33 which also clearly appears through both the coloured food product, the front display surface 27 and its transparent colour print 32.

An opening arrangement 38, in this case a pull tab, is also shown on the packaging container 25b.

Finally, it should be observed that the present invention, which has been described above with specific reference to the accompanying Drawings, is not restricted to these embodiments which have merely been described and shown by way of constituting examples, and that modifications and alterations which are obvious to a person skilled in the art are possible without deviating from the inventive concept as this is apparent from the appended Claims.

WHAT IS CLAIMED IS:

1. A flexible packaging container (25a, 25b) of a transparent packaging laminate (10) containing a coloured, liquid food product, the packaging container displaying, on a front (27) and/or rear (33) display surface a colour print (28, 29, 30, 31, 32, 34, 35, 36) applied directly thereon, **characterised in that** at least selected parts of said colour print are a transparent colour print (28, 29, 30, 32, 34, 35) which permits transparency for the food product; and that one or more colour shades in the transparent colour print are selected so that the visual impression thereof is enhanced or modified in cooperation with the colour of the food product.

2. The packaging container as claimed in Claim 1, **characterised in that** the transparent colour print (28, 29, 30, 32, 34, 35) has an opacity value of greater than 3, preferably greater than 4 and even more preferably greater than 5, but at most 13, preferably at most 12 and most preferably at most 11.

3. The packaging container as claimed in Claim 1 or 2, **characterised in that** the transparent colour print (28, 29, 30, 32, 34, 35) is a photographic print.

4. The packaging container as claimed in any of the preceding Claims, **characterised in that** said transparent colour print constitutes a background (30; 35) to an artwork or text print (28, 29, 31; 34, 36) which is disposed on the same display surface.

5. The packaging container as claimed in any of the preceding Claims, **characterised in that** said transparent colour print forms a complete artwork (28, 29, 34) or a part thereof.

6. The packaging container as claimed in any of the preceding Claims, **characterised in that** the transparent colour print (32) is applied at least on the front display surface (27); and that a background, artwork or text print

(34, 35, 36) is disposed on the rear display surface (33) so that the background, artwork or text print on the rear display surface clearly appears through both the coloured food product, the front display surface (27) and its transparent colour print (32).

7. The packaging container as claimed in any of the preceding Claims, **characterised in that** said front (27) and/or rear (33) display surface also displays colour print (31, 36) directly applied thereon on selected parts and affording opacity and preferably constituting a text and/or artwork and preferably including a subjacent white colour layer and an upper colour layer.

8. The packaging container as claimed in any of the preceding Claims, **characterised in that** said transparent colour print (30, 32) is of the same colour as the food product, but of a different shade, whereby the visual impression of the transparent colour print is enhanced in cooperation with the colour of the food product.

9. The packaging container as claimed in any of Claims 1 to 7, **characterised in that** said transparent colour print (28, 29) is of a different colour than the food product, whereby the visual impression of the transparent colour print in cooperation with the colour of the food product is modified to a third colour.

10. The packaging container as claimed in any of the preceding Claims, **characterised in that** the packaging laminate includes at least one gas barrier layer (13, 14).

11. The packaging container as claimed in Claim 10, **characterised in that** the packaging laminate (10) includes an outside layer of thermosealable olefin polymer (16; 16a, 16b; 17), a first gas barrier layer of SiOx (13) coated on a first polymer carrier layer (11) and a second gas barrier layer of SiOx (14) coated on a second polymer carrier layer (12), as well as an interjacent polymer layer (15) of greater thickness in relation to each one of the

surrounding layers which is laminated between the two gas barrier coated carrier layers.

12. The packaging container as claimed in any of the preceding Claims, **characterised in that** it consists of a flexible bag (25a, 25b), preferably in portion size and with a hole (37) for a drinking straw or an opening arrangement (38).

13. A flexible transparent packaging laminate (10) for packing a coloured, liquid food product, the packaging laminate displaying a colour print (28, 29, 30, 31, 32, 34, 35, 36) directly applied thereon, **characterised in that** at least selected parts of said colour print (28, 29, 30, 32, 34, 35) are a transparent colour print which permits transparency for the food product.

14. The packaging laminate as claimed in Claim 13, **characterised in that** the transparent colour print (28, 29, 30, 32, 34, 35) has an opacity value greater than 3, preferably greater than 4 and even more preferably greater than 5, but at most 13, preferably at most 12 and most preferably at most 11.

15. The packaging laminate as claimed in Claim 13 or 14, **characterised in that** the transparent colour print (28, 29, 30, 32, 34, 35) is a photographic print.

16. The packaging laminate as claimed in any of Claims 13 to 15, **characterised in that** said transparent colour print constitutes a background (30; 35) to an artwork- or text print (28, 29, 31; 34, 36).

17. The packaging laminate as claimed in any of Claims 13 to 16, **characterised in that** said transparent colour print forms a complete artwork (28, 29, 34) or a part thereof.

18. The packaging laminate as claimed in any of Claims 13 to 17, **characterised in that** it also displays a colour print (31, 36) directly applied thereon on

selected parts and affording opacity, and preferably constituting a text and/or an artwork and preferably including a subjacent white colour layer as well as an upper colour layer.

19. The packaging laminate as claimed in any of Claims 13 to 18, **characterised in that** the packaging laminate (10) includes a gas barrier layer (13, 14).

20. The packaging laminate as claimed in Claim 19, **characterised in that** the packaging laminate includes an outside layer of thermosealable olefin polymer (16, 17), a first gas barrier layer of SiOx (13) coated on a first polymer carrier layer (11) and a second gas barrier layer of SiOx (14) coated on a second polymer carrier layer (12), as well as an interjacent polymer layer (15) of greater thickness in relation to each one of the surrounding layers which is laminated between the two gas barrier coated carrier layers.

21. Use of a directly applied, transparent colour print (28, 29, 30, 32, 34, 35) on a flexible, transparent packaging laminate (10) for packing (25a, 25b) of a coloured, liquid food product so that the transparent colour print permits transparency for the food product and one or more colour shades in the transparent colour print being selected so that the visual impression thereof is enhanced or modified in cooperation with the colour of the food product.

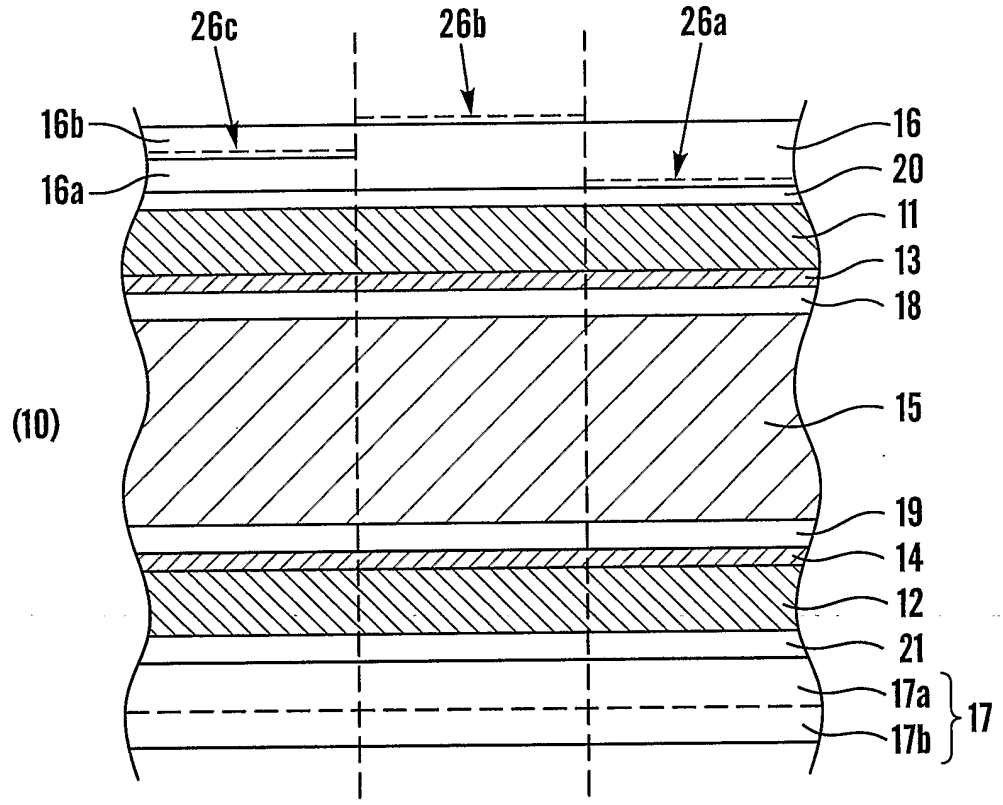
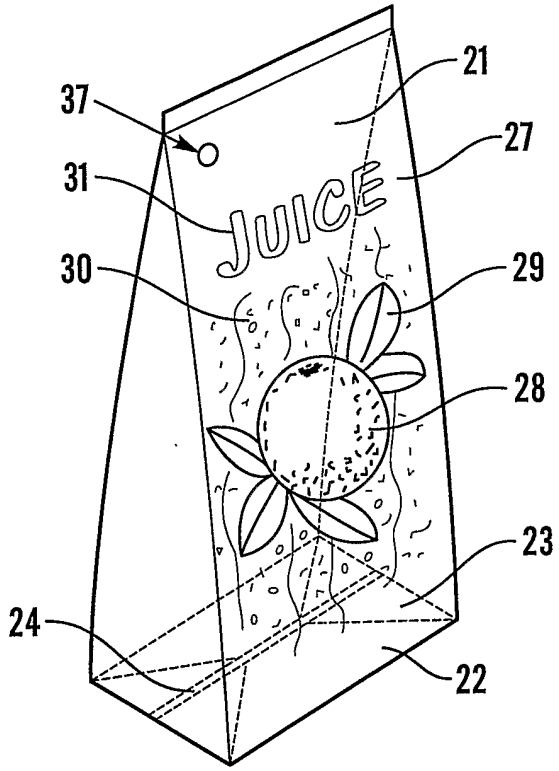
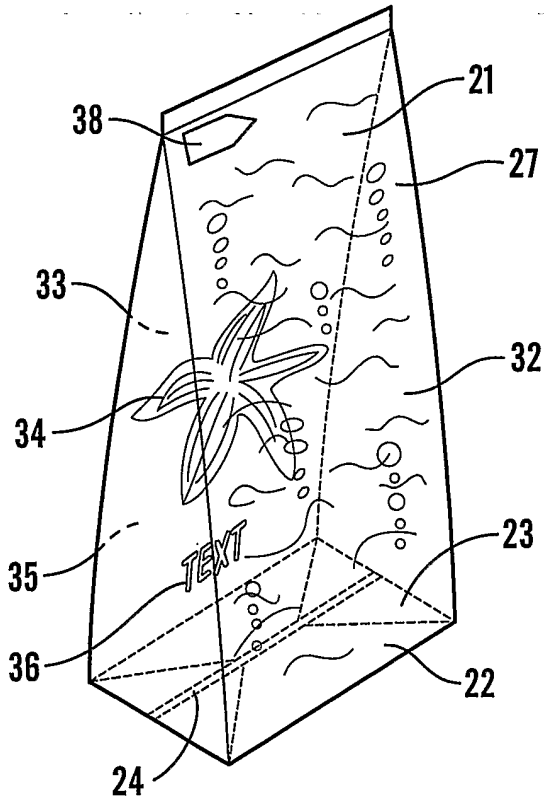


Fig. 1



(25a)

Fig.2a



(25b)

Fig.2b

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 2005/000888

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B32B 27/00, B65D 65/40, B44F 1/06
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)

IPC7: B32B, B65D, B44F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, se arch terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5542529 A (CARL C. HEIN, III ET AL), 6 August 1996 (06.08.1996), column 4, line 47 - line 52	1-21
Y	WO 2004043694 A1 (TETRA LAVAL HOLDINGS & FINANCE S.A.), 27 May 2004 (27.05.2004)	1-21
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☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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16 Sept 2005	29 -09- 2005
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Erika Stenroos/Els Telephone No. +46 8 782 25 00

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