



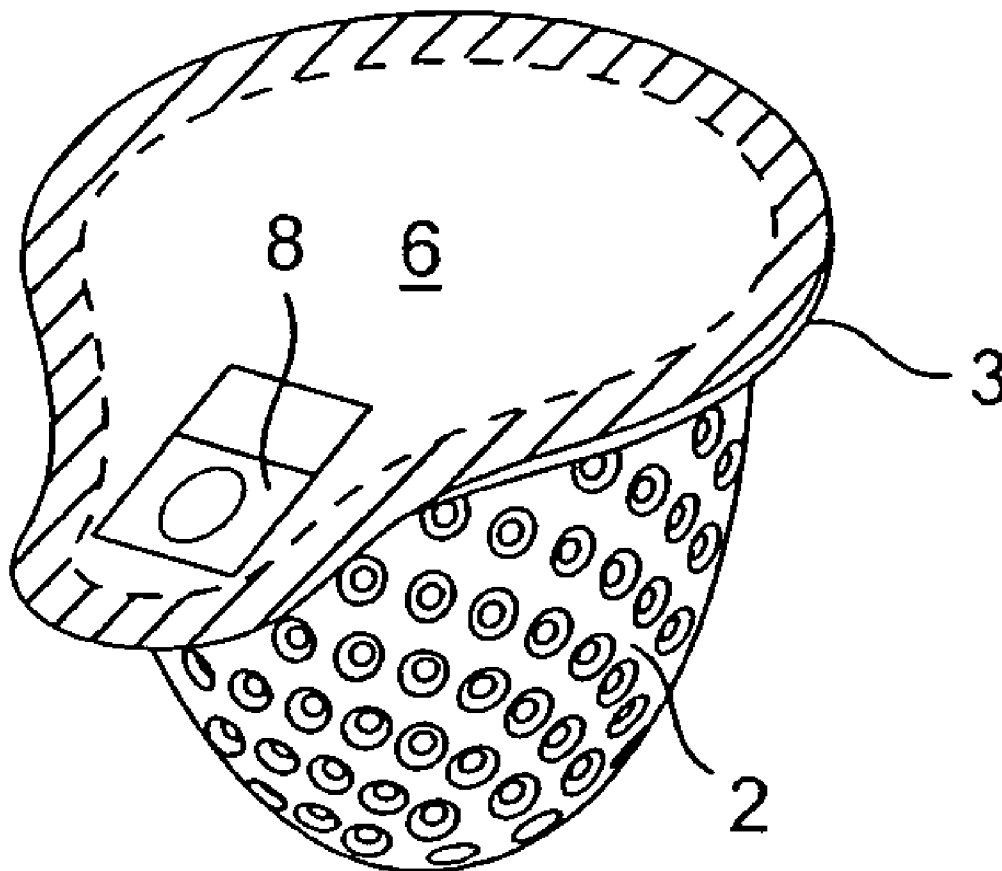
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Bourguignon et al.(10) **Pub. No.: US 2008/0197153 A1**(43) **Pub. Date: Aug. 21, 2008**(54) **SQUEEZABLE CONTAINER FOR DAIRY PRODUCTS**(30) **Foreign Application Priority Data**

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B65D 47/10 (2006.01)(52) **U.S. Cl.** 222/215; 222/541.9(57) **ABSTRACT**Correspondence Address:
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CHICAGO, IL 60690 (US)(73) Assignee: **NESTEC S.A.**, Vevey (CH)(21) Appl. No.: **11/913,303**(22) PCT Filed: **May 2, 2006**(86) PCT No.: **PCT/EP2006/004076**§ 371 (c)(1),
(2), (4) Date: **Dec. 19, 2007**

The present invention relates to a thermoformed container (1) for flowable food products comprising a squeezable container body (2) with a flat up-per edge (3) surrounding a container body opening (4), characterized in that: (i) said container body (2) is squeezable at least in both axial and transversal directions such that its volume can be reduced by at least 85%, preferably by at least 95% upon application of manual pressure or drawing up of the contained products, and (ii) said edge (3) is rigid, and comprises a dispensing spout (5) continuous with the opening (4) of the container body (2), said opening (4) being closed by at least one primary membrane (6) that is sealed onto said edge (3).



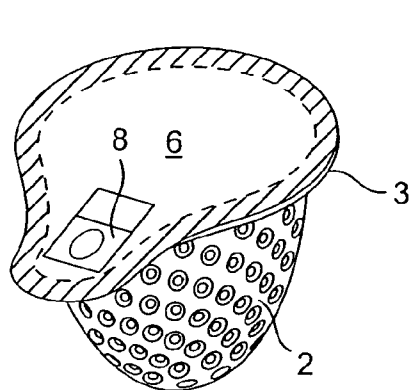


FIG. 1

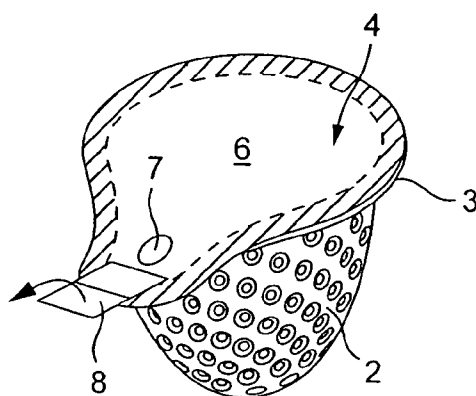


FIG. 2

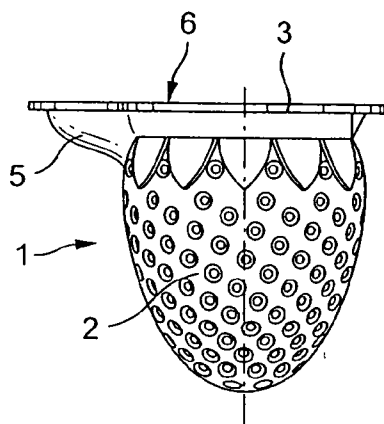


FIG. 3

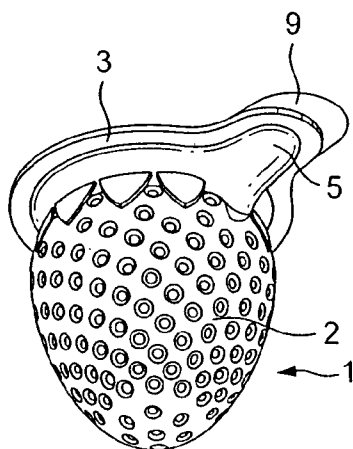


FIG. 4

SQUEEZABLE CONTAINER FOR DAIRY PRODUCTS

[0001] The present invention relates to a squeezable container, primarily for storing and dispensing of food chilled dairy products, semi liquids, or pasty products.

[0002] In the field of food products, containers for storing of dispensing of chilled dairy products are known. They typically consist of a thermoformed pot closed by a peelable membrane. Those pots are widely used for example for yoghurt.

[0003] However, all known containers are such that they require the use of a tool, such a spoon, straw, glass, or similar in order to dispense and consume the product, irrespective of the dose of product that is consumed.

[0004] Therefore, a need exists for a container for food products that are flowable, for example chilled dairy food products, that is inexpensive to produce and allows direct consumption from the packaging in a convenient and hygienic manner without the need for using a tool.

[0005] The present invention addresses the problems set out above with a thermoformed container for flowable food products comprising a squeezable container body with a flat upper edge, and a container body opening, characterized in that:

[0006] (i) said container body is squeezable at least in both axial and transversal directions such that its volume can be reduced by at least 85%, preferably by at least 95% upon application of manual pressure, and

[0007] (ii) said edge is rigid and comprises a dispensing spout continuous with the container body, said opening being closed by at least one primary membrane that is sealed onto said edge.

[0008] As can be understood from the above explanation of the structure of the invention, the container provides a convenient and user-friendly packaging structure for on-the-go consumption of a product, especially by young consumers. By "squeezable in both axial and transversal directions", it is meant that the container body is squeezable not only in one direction, but in at least two directions, which allows for maximum compression of the container volume, so as to allow the consumer to completely and efficiently dispense the container contents. In a preferred option, the container body is even squeezable in a multitude of directions, not only on two—axial and transversal—directions.

[0009] By axial direction, it is meant the vertical axis when the opening of the container is turned upwards. By transversal direction, it is meant any direction that is comprised in a plane perpendicular to the axial direction.

[0010] After opening the primary membrane that closes the container body, the consumer squeezes the container body so as to force the product outside of the container. Before squeezing, the consumer places the spout into the mouth so that the dispensed product flows into the mouth when the container body is squeezed. Therefore, there is no need for a tool like a spoon for dispensing the product from the container. After consumption, the container remains in one piece and can be disposed of very easily.

[0011] In a first embodiment of the present invention, said at least one primary membrane can be sealed onto the edge and comprises a dispensing hole located in the spout region of said membrane, said dispensing hole being closed by a secondary peelable membrane, sealed on the primary one.

[0012] Preferably, said dispensing hole has a diameter comprised in the range of 1 to 15 mm, preferably 2 to 8 mm.

[0013] In a second embodiment of the invention, said primary membrane can comprise a first portion closing the opening of the container body, that is sealed onto the flat upper edge in a fixed manner, and a second portion closing the dispensing spout, that is sealed onto the flat upper edge in a peelable manner.

[0014] Preferably, the peelable portion of the closing membrane can be folded over the rest of the membrane, in order to allow direct consumption from there container in an hygienic manner.

[0015] In a third embodiment of the invention, said membrane can comprise a first portion closing the opening of the container body that is sealed onto the edge, and a second portion closing the dispensing spout, both portions being sealed in a peelable manner.

[0016] In all cases, the primary membrane is preferably a complex foil comprising at least a sealing layer, and an aluminium or a polyester.

[0017] Also preferably, the upper flat edge is a horizontal ring.

[0018] Said dispensing spout can advantageously define a channel opening and has a width less than 10 mm and a height less than 10 mm.

[0019] In a preferred embodiment of the present invention, the container body is made from a thermoplastic material taken from the group of: polystyrene, polyactic acid, polyethyleneterephthalate (PET), polyethylene, polypropylene, or a combination thereof.

[0020] In all instances, the flowable product that can be contained in the container of the invention is preferably a frozen, chilled, or shelf-stable dairy food product.

[0021] Additional features and advantages of the present invention are described in, and will be apparent from, the description of one particular embodiment which is set out in the detailed description herebelow, with reference to the drawings in which:

[0022] FIG. 1 is a perspective top view of the container with the primary closing membrane closed by a secondary peelable membrane;

[0023] FIG. 2 is a perspective top view of the container of FIG. 1 with the secondary membrane in the open configuration;

[0024] FIG. 3 is a side view of the container in the closed configuration;

[0025] FIG. 4 is a perspective bottom view of the container in the closed configuration.

[0026] As can be seen from the figures, especially FIGS. 1 and 2, the shape of the container 1 is generally that of a strawberry. However, it should be understood that other shapes could be obtained as well by a thermoforming process.

[0027] According to the present invention, the container body 2 is squeezable in both axial and transversal directions such that its volume can be reduced by at least 95% upon application of manual pressure.

[0028] Also according to the present invention and as shown for instance in FIG. 3, a flat upper edge 3 that is located at the upper part of the container body 2, and surrounds a container body opening 4—the opening 4 is delimited in the figures by dotted lines—, comprises a dispensing spout 5 which is continuous with the container body 2.

[0029] In a first possible embodiment of the present invention, shown in FIG. 1, the opening 4 of the container body 2

and the dispensing spout **5** are closed by a primary membrane **6**. This primary membrane **6** is a complex foil comprising a sealing layer compatible with the material of the edge **3**, comprising aluminium and plastic.

[0030] As shown in FIG. 1, said primary membrane **6** is sealed onto the edge **3** in a fixed manner, and comprises a dispensing hole **7** in the spout region of said primary membrane. As shown in FIG. 1, a secondary, peelable, membrane **8** is releasably attached onto said primary membrane **6**. Said secondary membrane **8** can be easily peeled off from the primary membrane, as illustrated in FIG. 2, so as to open the dispensing hole **7**, and allow dispensing of there contained product.

[0031] As can be seen from FIGS. 2, 3 and 4, the spout **5** defines a generally channel opening and has a width less than 10 mm and a height less than 10 mm. The lengths of the spout and the channel are determined in order to allow the membrane to have a sufficient non-sealed surface, in order to use it as a tear open strip to peel the membrane from the spout, prior to consumption.

[0032] As shown in FIG. 4, in case the primary membrane should be removed completely from the container body edge, it can be sealed in a peelable manner and its shape can be made such that the spout portion **9** of said primary membrane protrudes from the spout region of the edge **3**.

[0033] It should be understood that various changes and modifications to the presently preferred embodiments described above in detail will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present invention and without diminishing its attendant advantages. It is therefore intended that such changes and modifications be covered by the appended claims.

1. A thermoformed container for flowable food products comprising: a squeezable container body having a flat upper edge, and a container body opening, the container body is squeezable at least in both an axial and a transversal direction such that its volume can be reduced by at least 85% upon application of manual pressure, and

the flat upper edge is rigid and comprises a dispensing spout continuous with the container body, the opening is closed by at least one primary membrane that is sealed onto the edge.

2. A container according to claim 1, wherein the primary membrane is sealed onto the edge and comprises a dispensing hole located in a dispensing spout region of the membrane, the dispensing hole is closed by a secondary peelable membrane that is sealed onto the primary membrane.

3. A container according to claim 2, wherein the dispensing hole has a diameter in the range of 1 to 15 mm.

4. A container according to claim 1, wherein the primary membrane comprises a first portion closing the opening of the container body, that is sealed onto the flat upper edge in a fixed manner, and a second portion closing the dispensing spout, that is sealed onto the flat upper edge in a peelable manner.

5. A container according to claim 1, wherein the peelable portion of the membrane is foldable over the remaining membrane.

6. A container according to claim 1, wherein the primary membrane comprises a first portion closing the opening of the container body that is sealed onto the edge, and a second portion closing the dispensing spout, both the first and second portions being sealed in a peelable manner.

7. A container according to claim 1, wherein the primary membrane is a complex foil comprising at least a sealing layer and an aluminium.

8. A container according to claim 1, wherein the edge is a horizontal ring.

9. A container according to claim 1, wherein the dispensing spout defines a channel opening and has a width less than 10 mm and a height less than 10 mm.

10. A container according to claim 1, wherein the container body is made from a thermoplastic material selected from the group consisting of: polystyrene, polyactic acid, polyethyleneterephthalate (PET), polyethylene, polypropylene, and a combination thereof.

11. A container according to claim 1, wherein the flowable product is selected from the group consisting of a frozen, chilled, and shelf-stable dairy food product.

12. A container comprising:

a squeezable container body having a flat upper edge, and a container body opening, the container body being squeezable in both an axial and a transversal direction and is so constructed and arranged that its volume can be reduced by at least 85% upon application of manual pressure, and

an edge that is rigid and comprises a dispensing spout, the opening is closed by a primary membrane that is sealed onto the edge.

13. A container according to claim 1 wherein the volume can be reduced by 95%.

14. A container according to claim 12, wherein the primary membrane is sealed onto the edge and comprises a dispensing hole located in a spout region of the membrane, the dispensing hole is closed by a secondary peelable membrane that is sealed onto the primary membrane.

15. A container according to claim 12, wherein the dispensing hole has a diameter comprised in the range of 1 to 15 mm.

16. A container according to claim 12, wherein the primary membrane comprises a first portion closing the opening of the container body, that is sealed onto the flat upper edge in a fixed manner, and a second portion closing the dispensing spout, that is sealed onto the flat upper edge in a peelable manner.

17. A container according to claim 12, wherein the peelable portion of the primary membrane is foldable over the remaining membrane.

18. A container according to claim 12, wherein the primary membrane comprises a first portion closing the opening of the container body that is sealed onto the edge, and a second portion closing the dispensing spout, both the first and second portions being sealed in a peelable manner.

19. A container according to claim 12, wherein the primary membrane is a complex foil comprising at least a sealing layer and an aluminium.

20. A container according to claim 12, wherein the edge is a horizontal ring.

21. A container according to claim 12, wherein the dispensing spout defines a channel opening and has a width less than 10 mm and a height less than 10 mm.

22. A container according to claim 12, wherein the container body is made from a thermoplastic material selected from the group consisting of: polystyrene, polyactic acid, polyethyleneterephthalate (PET), polyethylene, polypropylene, and a combination thereof.

23. A container according to claim 12, wherein the flowable product is selected from the group consisting of a frozen, chilled, and shelf-stable dairy food product.

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