

PACKAGING CONTAINER

FIELD OF THE INVENTION

[0001] The present invention relates generally to packaging containers. The packaging containers include a vessel and a cover, and may be used in the food and beverage industry. In one aspect, the invention relates to packaging containers in which beverage ingredients may be stored, and from which a beverage may be prepared by adding a liquid to the ingredients may be consumed. It should be appreciated, however, that the present invention is not limited to that application, only.

BACKGROUND OF THE INVENTION

[0002] Traditionally, separate containers have been used to store food or beverage ingredients in, to prepare food or beverages in, and to consume prepared food or beverages from.

[0003] Consumer demand has led to an increase in the number and variety of products which are available in a format which is either ready-to-consume, or which require only simple preparation steps before consumption. The popularity of packaging which may be used both to store food or beverage products after production, and to consume the food or beverage from, has increased. Where preparation is required after purchase but before consumption, the packaging must also facilitate the preparation.

[0004] As well as demands of supermarkets and the like, particular industries have driven product development. In the airline industry, for example, volume, weight and ease of preparation and consumption are important considerations. The bulk of airline food and beverage packaging can significantly increase costs. Equally, the speed with which cabin crew can serve food and beverages impacts

both the number of cabin crew required and, particularly on low cost airlines, the revenue that service attendants can generate as they pass through the cabin.

[0005] More generally in the hospitality industry where food and beverage products are sold and consumed, products which are quick and easy to prepare and consume can facilitate increase sales and reduce the need to provide dishes, cups and reduce the size of dining and drinking areas.

[0006] Examples of products requiring minimal preparation before consumption are 'instant' noodles, pre-packaged in a cup and breakfast cereal pre-packaged in a bowl. Dry noodle ingredients may require only the addition of hot water, before consumption. Dry breakfast cereal may require only the addition of cold milk, before consumption.

[0007] Such products must generally be sealed in a tamper-evident manner, to meet hygiene requirements. A rim at the top of the cup or bowl vessel is covered by a lid made from aluminium foil or silicon, which sits flush across the top of the cup or bowl. The lid is sealed onto the top of the cup or bowl using an adhesive such as a heat-activated glue.

[0008] One problem with such products is that a significant volume of air or gas is often sealed into the product, between the noodle or cereal food ingredient and the covering lid, to allow for the addition of the water or milk, and to allow for consumption with little risk of the prepared product spilling. This volume of air or gas contributes significantly to the total volume of the product.

[0009] Another problem is that adhesive may remain on the rim after removal of the lid, or fall into the inner zone of the vessel before consumption. Remnants of the adhesive are unhygienic and generally undesirable, particularly if they are present in the food or beverage, or if they are present on the top of the cup or bowl and a consumer's lips may come into contact with them, or a beverage may pass over them, during consumption.

[0010] Another example of a product requiring minimal preparation before consumption is a pod-containing cup. The pod is placed inside a cup, at the bottom of the cup. Dry ingredients for a drink are placed into the pod and a film of aluminium is sealed to the top of the pod, using adhesive. The pod is adhered to the inside of the cup. A consumer removes the aluminium film from the pod and adds water, preparing a beverage. A problem with the product is that the beverage may become contaminated before or during consumption, through contact with adhesive or surfaces of the pod which do not meet food standards. For example, glue used to adhere the film in place may remain at the top of the pod after removal of the film, and the glue may come into contact with the beverage. Furthermore, the beverage may seep between the pod and the inside wall of the cup, leading to glue used to adhere the pod into the cup contaminating the beverage. The problem is exacerbated if the glue is heat-activated and the water is hot. Another disadvantage of this product is its complexity.

[0011] The above discussion is intended to facilitate an understanding of the background of the invention. It should be appreciated, however, that the discussion is not an acknowledgement or admission that any of the matter referred to was published, known or part of the common general knowledge in Australia at the priority date of the application.

SUMMARY OF THE INVENTION

[0012] In one aspect, the invention provides a packaging container including

- a vessel defining a vessel base wall, and a upstanding vessel side wall structure extending upwardly from the vessel base wall defining an inner zone capable of retaining liquid,
- a cover defining a cover base wall, and a cover side wall structure extending upwardly from the cover base wall configured to rest within the

vessel side wall structure, whereby a void is defined between the vessel and the cover, and

- a circumferential seal adapted to seal the cover to an outer surface of the vessel below the vessel rim formation.

[0013] Preferably, an inner circumference of an upper region of the cover side wall structure is greater than an outer circumference of the vessel base wall. These relative dimensions will generally allow for two or more packaging containers to be stacked.

[0014] The vessel preferably has a vessel rim formation at an upper free end of the vessel side wall structure, and the cover side wall structure has a cover rim formation positioned above the vessel rim formation. The vessel rim formation and cover rim formations strengthen the upper regions of their respective side wall structures. The vessel rim formation also provides a surface against which a consumer's lips may rest if a consumer drinks a beverage or liquid food product from the vessel.

[0015] The cover rim formation preferably has a flange extending radially outwardly from an upper end of the cover side wall structure, the flange being circumferentially continuous. In use, the flange provides a surface to rest on top of the vessel rim formation. Preferably, at least a portion of the cover rim formation extends downwardly at a radially outer portion to define an annular downwardly facing groove to, in use, contain the vessel rim formation. When the cover rim formation contains the vessel rim formation, the cover is less likely to move sideways with respect to the vessel. When the cover rim formation extends over the vessel rim formation, the vessel rim formation is protected from contamination, for example by dust falling on it or from adhesive such as glue sticking to it. Maintaining the vessel rim formation hygienic may be important as, when consuming a liquid from the inner zone of the vessel, a consumer's lips may rest against the vessel rim and/or the liquid may pass over the vessel rim.

[0016] The packaging container preferably includes a circumferential seal adapted to seal the cover to an outer surface of the vessel below the vessel rim formation. Sealing the cover to the vessel allows any contents stored within in the inner zone to remain hygienic.

[0017] The circumferential seal preferably includes a circumferentially extending film having a lower edge zone adhesively secured to the outer surface of the vessel. Adhering the film to the outer surface of the vessel below the vessel rim formation ensures that remnants of the adhesive do not remain on the vessel rim formation after the circumferential seal is removed.

[0018] The circumferential seal preferably includes a circumferentially extending film having an upper edge zone adhesively secured to a radially outwardly facing surface of the cover. Preferably, the circumferentially extending upper edge zone of the film may be adhesively secured to an outer surface of the cover rim formation. When the film is adhered to a radially outwardly facing surface of the cover or to an outer surface of the cover rim formation, the vessel rim formation remains free of adhesive.

[0019] The circumferential seal is preferably at least partly formed by a tubular film. Alternatively, the circumferential seal may be at least partly formed by a ribbon or tape of film, which may be wrapped around a circumferentially radially outwardly facing surface of the cover and one or more surfaces of the cover rim formation.

[0020] The circumferential seal preferably includes an opening indication at least partially extending through it. The opening indication comprises one or more perforation lines. The opening indication may form a point of weakness in the circumferential seal, facilitating easier removal of the seal, before the cover is removed from the vessel. The opening indication may include a tab which the consumer pulls to remove the seal. Alternatively, the consumer may twist the

circumferential seal and/or the cover to break the seal at the opening indication and remove the seal.

[0021] Preferably, a food or beverage product is, or one or more ingredients for making a food or beverage product are, present in the void defined between the vessel and the cover. The dimensions of the vessel and cover may be such that the entire contents sits above the vessel base wall and below the cover base wall. Alternatively or in addition, the content may also be present between the vessel side wall structure and the cover side wall structure.

[0022] The contents is preferably dry, reducing the weight of the contents packaged in the container. The contents is preferably suitable for making a beverage or food product, with the addition of a liquid such as hot or cold water or milk.

[0023] Preferably, the vessel and the cover are dimensionally self-sustaining. A dimensionally self-sustaining vessel assists in retaining the contents and/or food or beverage product once the seal and the cover are removed, and increases the ease with which a consumer may consume the food or beverage product from the vessel. A dimensionally self-sustaining cover is generally easier to insert into the inner zone of the vessel, during manufacture.

[0024] Preferably, the cover base wall is configured to receive at least a lower region of the vessel extending below an upper most portion of the cover base wall when multiple containers are stacked. Conveniently, in a stacked configuration, a vessel base wall of a second packaging container positioned above a first packaging container in the stack is positioned adjacent to or contacting a cover base wall of the first packaging container. Reducing any volume between packaging containers when stacked reduces the overall volume of a stack of the containers.

[0025] The vessel is preferably suitable for holding a food or beverage product during consumption. A vessel which is suitable for packaging contents for making a food or beverage product, suitable for preparing a food or beverage product in, and suitable for consuming the food or beverage product from, is particularly convenient.

[0026] Preferably, the cover base wall is indented upwardly from a lowermost peripheral extremity to form a recessed cavity.

[0027] In another aspect, the invention provides a packaging container including:

- a vessel defining a vessel base wall, and an upstanding vessel side wall structure extending upwardly from the vessel base wall, defining an inner zone capable of retaining liquid, and
- a cover defining a cover base wall, and a cover side wall structure extending upwardly from the cover base wall configured to rest within the vessel side wall structure, whereby a void is defined between the vessel and the cover,

wherein the vessel includes a vessel rim formation at an upper free end of the vessel side wall structure, the cover side wall structure has a cover rim formation positioned above the vessel rim formation, the cover rim formation has a flange extending radially outwardly from an upper end of the cover side wall structure, the flange being circumferentially continuous, and the cover rim formation is formed as an annular clip to, in use, engage with and releasably hold the vessel rim formation.

[0028] In another aspect, the invention provides two or more packaging containers, wherein the two or more packaging containers are stacked. Stacking the packaging containers assists in transportation. Preferably, a volume of the

stack is less than the sum of a volume of the individual packaging containers. Reducing volume in this manner leads to a corresponding reduction in storage and transport costs. A reduction in volume also increases convenience for consumers storing the packaging containers, enabling consumers to fit a greater number of the packaging containers in a given space.

[0029] Preferably, the two or more containers are vertically stackable, and when stacked, the lower cover base wall of a lower container engages with the vessel base wall of an upper container.

[0030] In another aspect, the invention provides a packaging container for use in relation to a heated food product. In this embodiment, the packaging container is suitable for storing one or more ingredients. The one or more ingredients may be combined with a liquid in the container. The combined one or more ingredients and liquid may then be heated in the container, before consumption. Preferably, more than one ingredient is present. Preferably, the liquid is water. Preferably, the ingredients and water are combined with stirring. Preferably, the combined ingredients and water are heated in a microwave oven to produce a food product. Alternatively, the combined ingredients and water may be baked in a conventional domestic oven to produce the food product. The cover 14 is preferably removed before heating. The food product may be consumed either directly from the vessel, or after removal from the vessel.

[0031] In this aspect, the vessel is preferably made from paper board coated with a thin layer of polypropylene, which renders the vessel waterproof. Unlike polyethylene, polypropylene may have the advantage of being microwavable.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] Preferred embodiments of the invention will now be described by way of example only, with reference to the accompanying drawings, in which:

[0033] Figure 1 is a perspective view of a packaging container according to a preferred embodiment of the invention. The cover side wall structure rests within the vessel side wall structure and the circumferential seal seals the cover to an outer surface of the vessel.

[0034] Figure 2 is a side sectional view of the packaging container according to Figure 1.

[0035] Figure 2A is a cut away side sectional view showing part of the packaging container according to Figure 1 in more detail, in which a portion of a cover rim formation extends downwardly at a radially outer portion to define an annular downwardly facing groove which contains a vessel rim formation.

[0036] Figure 2B is a cut away side sectional view showing part of a packaging container according to another preferred embodiment of the invention, in which a cover rim formation is formed as an annular clip to, in use, engage with and releasably hold the vessel rim formation.

[0037] Figure 3 is a side sectional view of the packaging container according to Figure 1, in which a food or beverage product or one or more ingredients is present in the void between the vessel and the cover.

[0038] Figure 4 is side sectional view of a stack of several packaging containers according to Figure 1.

[0039] Figure 5 is a side sectional view of a packaging container according to another preferred embodiment in which the lower region of the vessel is substantially flat.

[0040] Figure 6 is a side sectional view of a stack of two packaging containers according to another preferred embodiment, in which the lower cover base wall is

configured to receive a lower region of the upper vessel, extending below an upper most portion of the lower cover base wall.

[0041] Figure 7 is a side sectional view of a stack of three packaging containers according to Figure 6, in which lower cover base walls receive lower regions of upper vessels, reducing the overall height of the stack.

[0042] Figure 8 is a side sectional view of a stack of two packaging containers according to another preferred embodiment, in which the cover base walls are raised in comparison to the embodiment of Figure 1, increasing the volume of the voids.

[0043] Figure 9 is a side sectional view of a packaging container according to another preferred embodiment, in which the dimensions of the container have been optimised from the embodiment of Figure 1 for use with a heated food product.

DETAILED DESCRIPTION OF THE DRAWINGS

[0044] Referring to Figure 1, the packaging container 10 according to a preferred embodiment of the invention includes a vessel 12 in the form of a cup, a cover 14 and a circumferential seal in the form of a circumferentially extending tubular film 16. The tubular film 16 according to the preferred embodiment includes an opening indication comprising two perforation lines 18, 20 which extend vertically through approximately half of the height of the tubular film 16 from a lower edge 46. The opening indication also includes a depending tab 22. In use, a consumer may break the tubular film 16 by gripping and pulling the tab 22 and tearing the perforation lines 18, 20, which are the lines of greatest weakness in the tubular film 16. The perforation lines 18, 20 do not extend to the uppermost edge of the tubular film 16, to minimise the possibility of the tubular film 16 inadvertently tearing when multiple packaging containers 10 are stacked and unstacked. The circumferential seal is preferably tamper-evident.

[0045] Referring to Figure 2, the vessel 12 defines a vessel base wall 24 and an upstanding vessel side wall structure 26 extending upwardly from the vessel base wall 24, defining an inner zone 28 which is capable of retaining liquid. The vessel 12 represented in Figure 2 is circular and is manufactured from paper board with a double walled structure. The vessel 12 could be manufactured from a suitable food grade plastics material. Preferably, the vessel is made from paper board coated with a thin layer of polyethylene, which renders the vessel waterproof and welds paper board seams together. The transverse cross-sectional shape would not need to be circular.

[0046] The cover 14 defines a cover base wall 30, and a cover side wall structure 32 extending upwardly from the cover base wall 30. The cover side wall structure 32 is configured to rest within the vessel side wall structure 26 with an intermediate flange 70 contacting an inner surface 71 of the side wall structure 26. The cover is preferably made from polypropylene. A void 34 is defined between the vessel 12 and the cover 14, primarily located between the cover base wall 30 and the vessel base wall 24.

[0047] Referring to Figure 2A, the vessel 12 includes a vessel rim formation 36 at an upper free end of the vessel side wall structure 26, and the cover side wall structure 32 includes a cover rim formation 38 positioned above the vessel rim formation 36, and preferably having a portion resting on the vessel rim formation 36.

[0048] The cover rim formation 38 has a flange 40 extending radially outwardly from an upper end of the cover side wall structure 32, the flange 40 being circumferentially continuous. A portion 42 of the cover rim formation 38 extends downwardly at a radially outer position to define an annular downwardly facing groove 73 to, in use, contain the vessel rim formation 36.

[0049] Referring to Figure 2B, in another embodiment of the invention, the cover rim formation 38 is formed as an annular clip 44 to, in use, engage with and releasably hold the vessel rim formation 36.

[0050] The tubular film 16 has a lower edge zone 46 secured with lower zone adhesive 48 to the outer surface of the vessel 12. The tubular film 16 also has an upper edge zone 50 secured with upper zone adhesive 52 to an upwardly facing surface 54 of the cover or more particularly, as illustrated, to an upper surface 54 of the flange 40. Alternatively, the upper edge zone 50 may be secured with adhesive to a radially outwardly facing surface of the flange 42 of the cover 14.

[0051] Referring to Figure 3, a dry ingredient or ingredients 62 for making a beverage product or a food product is present in the void 34, whereby a liquid such as hot or cold water or milk can be added to make a desired food or beverage product.

[0052] Referring to Figure 4, in respect of each packaging container 10, an inner circumference of an upper region of the cover side wall structure 32 having a corresponding inner diameter 56, is greater than an outer circumference of the cover base wall 30, having a corresponding outer diameter 58. Each cover base wall 30 is configured to receive at least a lower region 60 of a vessel 12 extending below an uppermost portion of the cover base wall 30 thereby enabling multiple containers to be stacked, one into another, to form a stack 80.

[0053] A volume of the stack 80 is less than the sum of a volume of the individual packaging containers 10. This saves space when individual packaging containers 10 are stacked, for example on a factory site where the packaging containers are stacked, downstream through road, air or sea transport to the supermarket shelf, or other areas where the packaging containers may be sold, such as aircraft cabins.

[0054] Referring to Figure 5, in a preferred embodiment, both the lower region of the vessel and the cover base wall are substantially flat, which contributes to ease of stacking multiple packaging containers. Vessels may be conveniently manufactured with substantially flat lower regions when manufactured from, for example, plastic materials.

[0055] Referring to Figure 6, the base wall 30 of the cover 14 is indented upwardly from a lowermost peripheral extremity 81 of the cover 14 centrally upwardly to form a recessed cavity 82. The cavity 82 effectively extends the volume of the void 34 to increase the volume for holding desired contents. When two containers 10, 10' according to this further preferred embodiment of the invention are stacked by being moved in the direction of arrow 83, the base wall 30 of the cover 14 of the lower container 10 is configured to receive a lower region 83 of the vessel 12 of the upper container 10', with the lower region 83 of the vessel eventually extending below an upper most portion of the base wall 30 of the cover 14.

[0056] Referring to Figure 7, containers according to Figure 6 may be configured such that when stacked, the cover base walls 30 of the lower container 10 engage with the vessel base wall 24 of the upper container 10'. Compared with Figure 6, the per-container height of the stack is reduced.

[0057] Referring to Figure 8, in a further preferred aspect of the invention, cover base walls are raised in comparison to the embodiment of Figure 6 and the cavity 82 formed by raising the cover base wall 30 is further increased thereby further increasing the volume of the voids. Compared with Figure 6, the per-container height of the stack 80 remains the same.

[0058] Referring to Figure 9, in a further preferred aspect of the invention, in comparison to the embodiment of Figure 1, the volume of the void is increased by increasing the height of the cover base wall 30, and the height of the container is lowered. These changes render the container more suitable for use with heated

food products, such as muffins or cakes. Increasing the volume of the void facilitates the storage of a greater volume of dry ingredients, which is particularly convenient when the volume of the dry ingredients is relatively high in comparison to the volume of liquid to be added by the consumer. Reducing the overall height of the container makes it easier to consume solid contents directly from the vessel, for example with utensils such as a spoon, fork or chopsticks.

[0059] In use, a consumer removes the cover 14 from a packaging container 10 and adds a desired liquid to the inner zone 28 of the vessel 12. The consumer combines the liquid and the dry ingredients 62 in the inner zone 28 to form a beverage or a food product. The user then drinks the beverage product or eats the food product directly from the inner zone 28 of the vessel. The packaging container 10 is simple and convenient to use.

[0060] In another aspect of the invention, a food or beverage product is present in the void 34 and the consumer simply removes the cover 14 and consumes the food or beverage product from the inner zone 28 of the vessel.

[0061] If a hot liquid such as hot water or milk is to be added to the vessel, the vessel must be made from a material that is sufficiently heat-resistant. The vessel preferably has sufficient insulating properties for the consumer to hold it when consuming a hot food or beverage product from it. The vessel is preferably a double-walled paper cup, which may be manufactured in a conventional manner.

[0062] The cover is preferably made from food-grade plastic and may be manufactured by conventional injection moulding.

[0063] The wall of the cover side wall structure is preferably thin, which assists with stacking the packaging containers inside each other. In an alternative embodiment, the cover is made from a thin plastic film, which is vacuum-sucked and held into an ingredient-containing cup during manufacture.

[0064] As well as protecting the vessel rim formation, the cover protects any contents, such as a food or beverage product or one or more ingredients, from contamination.

[0065] The tubular film may be made from plastic and is preferably translucent. Preferably, the tubular film is made from heat-shrinkable plastic.

[0066] Assembly of the packaging container generally involves placing dry beverage ingredients into a cup, placing the cover into the cup, over the ingredients, and sealing the cover onto the cup.

[0067] When configured for a liquid to be added before a food product is consumed, the contents is preferably a cereal such as a breakfast cereal and the liquid is preferably milk. Alternatively, the contents may be a dessert and the liquid may be a sauce such as custard. In a further alternative, the contents may be pasta or noodles, for example for a noodle soup product, and the liquid may be hot water.

[0068] When configured for a liquid to be added before a beverage product is consumed, the contents is preferably dry ingredients for making a beverage product. Without limitation, the beverage product is preferably a hot chocolate, instant coffee or tea-based beverage.

[0069] While the present invention has been described with reference to a specific embodiment, it will be appreciated that various modifications and changes could be made without departing from the scope of the invention. For example, the invention may be applied to a food product in a bowl, and the vessel may be a shape which is not symmetrical about an axis, such as a bowl having a square top section.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A packaging container including

a vessel defining a vessel base wall and an upstanding vessel side wall structure extending upwardly from the vessel base wall, defining an inner zone capable of retaining liquid,

a cover defining a cover base wall and a cover side wall structure extending upwardly from the cover base wall configured to rest within the vessel side wall structure, whereby a void is defined between the vessel and the cover, and

a circumferential seal adapted to seal the cover to an outer surface of the vessel below the vessel rim formation.

2. The packaging container according to claim 1, wherein an inner circumference of an upper region of the cover side wall structure is greater than an outer circumference of the vessel base wall.

3. The packaging container according to claim 1 or 2, wherein the vessel includes a vessel rim formation at an upper free end of the vessel side wall structure, and the cover side wall structure has a cover rim formation positioned above the vessel rim formation.

4. The packaging container according to claim 3, wherein the cover rim formation has a flange extending radially outwardly from an upper end of the cover side wall structure, the flange being circumferentially continuous.

5. The packaging container according to claim 4, wherein at least a portion of the cover rim formation extends downwardly at a radially outer portion to define an annular downwardly facing groove to, in use, contain the vessel rim formation.
6. The packaging container according to claim 4, wherein the cover rim formation is formed as an annular clip to, in use, engage with and releasably hold the vessel rim formation.
7. The packaging container according to any one of claims 1 to 6, wherein the circumferential seal includes a circumferentially extending film having a lower edge zone adhesively secured to the outer surface of the vessel.
8. The packaging container according to any one of claims 1 to 6, wherein the circumferential seal includes a circumferentially extending film having an upper edge zone adhesively secured to a radially outwardly facing surface of the cover.
9. The packaging container according to claim 8, wherein the circumferentially extending upper edge zone of the film is adhesively secured to an outer surface of the cover rim formation.
10. The packaging container according to any one of claims 1 to 9, wherein the circumferential seal is at least partly formed by a tubular film.
11. The packaging container according to any one of claims 1 to 10, further including an opening indication at least partially extending through the circumferential seal.
12. The packaging container according to claim 11, wherein the opening indication comprises one or more perforation lines.

13. The packaging container according to any one of the preceding claims, wherein a food or beverage product is, or one or more ingredients for making a food or beverage product are, present in the void.
14. The packaging container according to claim 13, wherein the one or more ingredients are dry and for making a beverage product.
15. The packaging container of any one of the preceding claims, wherein the vessel and the cover are dimensionally self-sustaining.
16. The container according to claim 15, wherein the cover base wall is configured to receive at least a lower region of the vessel extending below an upper most portion of the cover base wall when multiple containers are stacked.
17. The packaging container according to any one of the preceding claims, wherein the vessel is suitable for holding a food or beverage product during consumption.
18. Two or more packaging containers according to any one of the preceding claims, wherein the two or more packaging containers are stacked.
19. The two or more packaging containers according to claim 18, wherein a volume of the stack is less than the sum of a volume of the individual packaging containers.
20. The packaging container according to any one of claims 1 to 17, wherein the cover base wall is indented upwardly from a lowermost peripheral extremity to form a recessed cavity.

21. The packaging container according to claim 20, wherein two or more of the containers are vertically stackable, and when stacked, the lower cover base wall of a lower container engages with the vessel base wall of an upper container.