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(54) **LIQUID PERSONAL CARE PRODUCTS CONTAINER AND DISPENSING**

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(57) **ABSTRACT**

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(63) **Continuation-in-part of application No. 09/620,431, filed on Jul. 20, 2000, now Pat. No. 6,439,387.**

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A method of packing and container for a personal care product use for single use comprising forming a container body from a thermoplastic material such as polypropylene, polyethylene, polystyrene and the like, to a size product sufficient to contain a 3-4 ounce amount of the liquid personal care product in a well thereof; the container body comprises an open well with a peripheral lip an open end thereof; a printed foil strip, sized to cover the opening and at least a full circumferential portion of the container lip is heat, resin or adhesive sealed to the thermoplastic body after the product is disposed therein; the foil and seal are of sufficient strength to retain the 3-4 ounces of liquid product even in an obverted position with jostling such as during transport; the container is not readily reclosable and storable and the full contents are intended to be and may readily be used once the container is opened, i.e., for a single use.

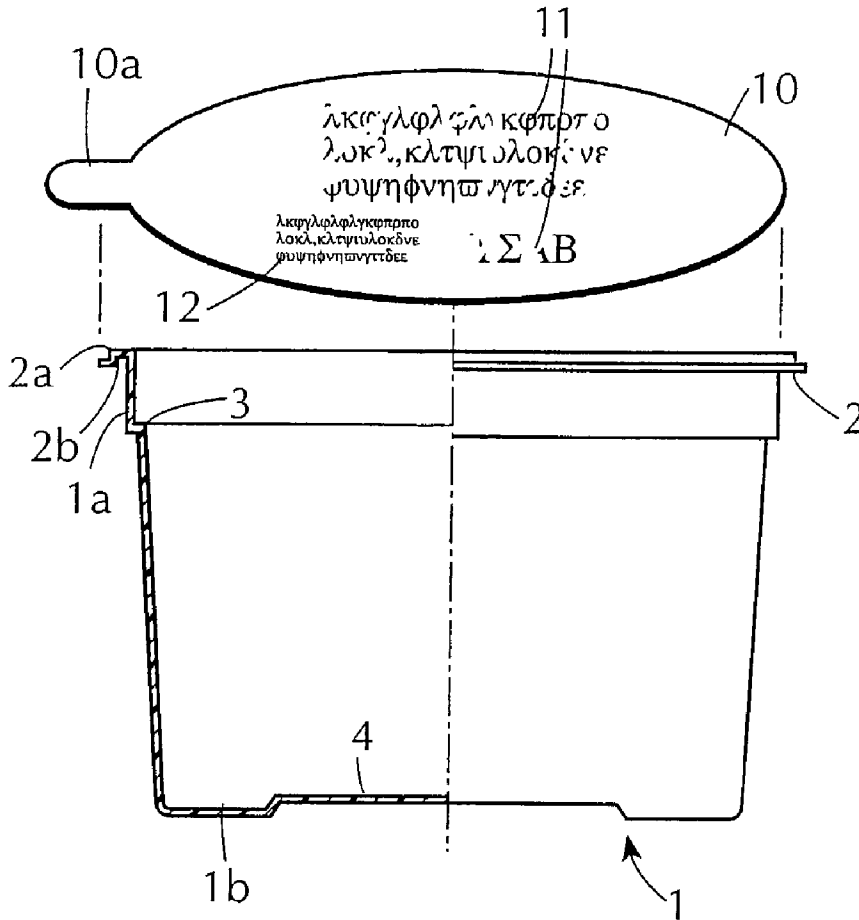


FIG. 1

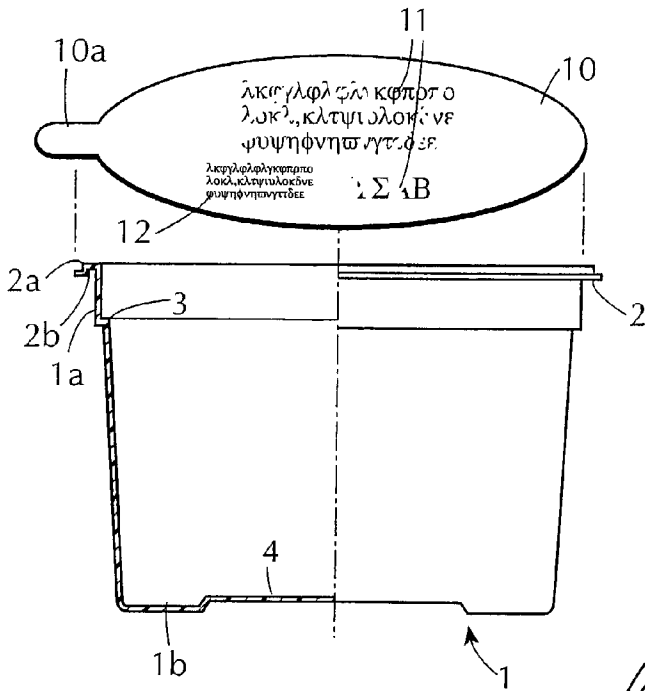


FIG. 2

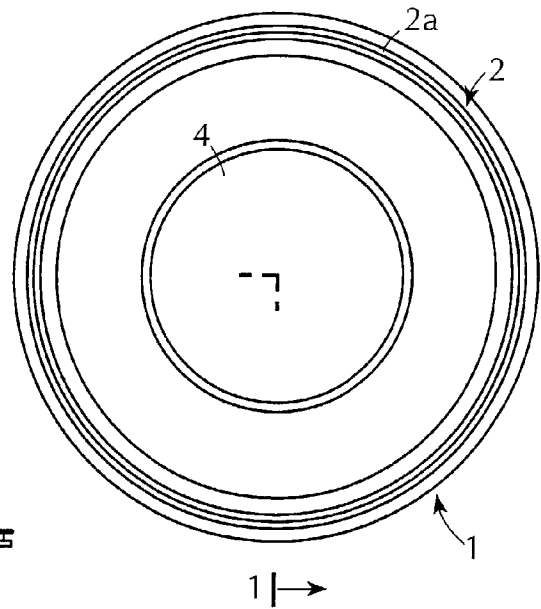
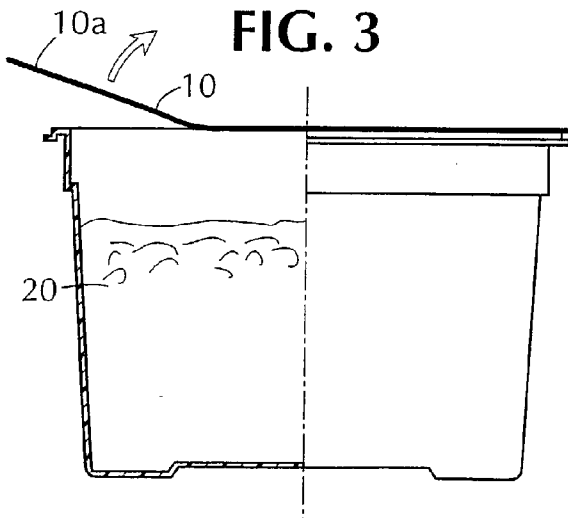


FIG. 3



LIQUID PERSONAL CARE PRODUCTS CONTAINER AND DISPENSING

[0001] This is a continuation in part of co-pending application Ser. No. 09/620,431, filed Jul. 20, 2000.

FIELD OF THE INVENTION

[0002] This invention relates to liquid cleansing products such as liquid personal care products and the packaging therefor. Specifically this invention relates to containers for liquid personal care products such as liquid soaps, shampoos and conditioners.

[0003] Liquid care products are known for household care and personal care use. Such liquid care products generally contain a cleansing agent, but may contain treatment agents, fragrances and the like well-known in the art. Liquid household care products include e.g. laundry detergents and fabric softeners, which generally contain cleansing, whitening, bleaching agents and/or fragrances. Liquid personal care products include e.g. body and hand cleansers and lotions, shampoos and hair conditioners, skin lotions, sun blocks and tanning oils. These products often likewise contain cleansing agents, treatment agents and/or fragrances.

[0004] Liquid household care products and liquid personal care products are generally packaged and sold in blow molded bottles in quantities sufficient for multiple uses.

[0005] Liquid personal liquid care products are generally not packaged in small quantities, except in tear open foil packages for trial size use. These tear open foil packages require tough leak tough leak resistant containment materials, and are difficult and inconvenient to tear open especially without accidental spillage.

SUMMARY OF THE INVENTION

[0006] It is accordingly an object of the present invention to provide a method and container for the economical containment of measured small amounts of a liquid personal care product, sufficient for an average single use, in a non-closable, non-storable, non-reusable economical container which is resistant to accidental spillage but which is readily openable for use.

[0007] It is a further object of the present invention to provide said single use amount of liquid product in a container suitable for use in a vending machine.

[0008] It is yet a further object of the present invention to provide a convenient packaged form for liquid personal care product, which requires no measuring or other handling.

[0009] Generally the present invention comprises a method and container package for conveniently packaging single use amounts of a liquid personal care product in a non-re-closable, non-reusable, non-storable container, comprising the steps of:

[0010] a) forming a self-standing leak resistant container with an open well, of a size sufficient to contain enough liquid personal care product for a single average use, said container being formed preferably from a plastic such as a thermoplastic material (e.g., polypropylene, polyethylene, polystyrene and the like), with said well having an opening,

completely peripherally bounded with a peripheral outwardly extending short ledge;

[0011] b) filling the container with an amount of liquid personal care product sufficient only for about a single average use;

[0012] c) placing a cover sheet of a material which is preferably heat sealable, on the ledge around the opening of the well and enclosingly across the opening of the well and fully adhering, such as by heat sealing, the cover sheet to sealingly enclose the liquid within said container, wherein said cover sheet is congruently sized to the areal dimensions of the opening of the well and the ledge therearound, and wherein a portion of the cover sheet is manually accessible for gripping in peeling off the cover sheet from the container when the liquid product is to be used,

[0013] wherein the seal is of sufficient tensile strength to resist accidental opening of the container but wherein the seal has a low peel strength for facilitated peeling removal of the cover sheet, preferably without jerking or the leaving of a remaining residue.

[0014] Alternatively, a peelable adhesive seal or resin seal is utilized in lieu of the heat seal. It is understood that the adhesive strength is of a similar tensile strength to resist accidental opening of the container prior to use. It is preferred that the adhesive or resin loses a substantial portion of its adherence when the seal is broken in order to discourage re-closure and the likely spilling of any residue product.

[0015] The cover sheet is preferably a thin metal foil such as of aluminum and is preferably pre-printed with manufacturer identification, trademark(s), and usage instructions. The metal is dimensioned to provide sufficient retaining strength for the contained liquids even under jostling shipping and handling conditions. A cover sheet of the same material as the container is to be avoided with a full heat seal since the resultant seal is more of a material weld and may be difficult to separate, especially without leaving a torn residue.

[0016] The cost of the single-use liquid personal care packaging of the present invention, which is non-reusable and non-storable, is lower than the cost of packaging currently utilized.

[0017] The above and other features and advantages of the present invention will become more evident from the following discussion and drawings in which:

SHORT DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a partial sectioned side view of a container made in accordance with the present invention with a cover sheet being placed thereon;

[0019] FIG. 2 is a top view of the open container of FIG. 1; and

[0020] FIG. 3 is the container of FIG. 1, having been sealed by the cover sheet and filled with liquid detergent, as it is being opened.

DETAILED DESCRIPTION OF THE INVENTION

[0021] The containers made in accordance with the present invention are formed with frusto-conical sloped walls whereby the cups can be nested within each other for facilitated storage and processing. The peripheral ledges are preferably configured with a flat upper surface for heat sealing with the cover sheet and with a channeled lower surface to enhance structural rigidity. A peripheral indent in the wall of the container permits offset nesting of the containers for easy removal separation from each other. The peripheral ledges are minimized in lateral extent to concomitantly minimize peeling effort but are sufficiently wide enough to effect a heat seal of the requisite strength or the application of sufficient adhesive for adherence of sufficient strength. A $\frac{1}{8}$ inch extension is an effective width for a container with approximate dimensions of 1.8" height and 2.75" diameter opening. Because of the frusto-conical structure, the base of the cup has a smaller diameter of about 2.4" to provide a well sufficient to contain the requisite maximum of four ounces of liquid. Though the containers may be larger and capable of containing more liquid, it is preferred that the volume of the container not be more than 25% above the volume actually required by the liquid.

[0022] The containers are preferably made of polystyrene with an indent base to increase structural strength thereof.

[0023] An extending tab section of the cover sheet is folded down when not used and lifted as a starting lever for removal of the cover sheet from the container when the liquid is to be used. After removal of the cover sheet, the liquid is poured onto the desired surface, without measuring or manipulation, and the container and cover are discarded. No portion of the personal care liquid can be, or is intended to be, readily stored since the contained amount of liquid is pre-measured for the desired single-use. The container cannot be practically re-adhered by merely folding back or replacing the cover sheet. Further, a liquid in an open cup is not readily practicably stored without spillage.

[0024] The container made according to the present invention are particularly suited to liquid personal care products. Such as shampoos, conditioners, hair creams and tonics, hand and body soaps, cleansers and lotions; sun blocks, tanning oils, moisturizers, antibacterial liquids, and the like.

[0025] In one manner of application, such as a hair care product, the user pulls the extending tab of the cover sheet to peel off the cover sheet from the container body. After removal of the cover sheet, the user pours the e.g. liquid hair care product onto the hair and scalp, without the need for measuring or manipulation. The pre-measured single use quantity of hair care product is thus readily applied. After pouring of the liquid hair care product, the user discards the cover sheet and container into a bathroom waste receptacle.

[0026] The liquid personal care product single use container is particularly useful in travel applications. The user does not have to carry conventional blow molded plastic or glass personal care product containers in travel bags and luggage. Such prior art containers are subject to breakage or spillage, particularly where the replaced screw cap or multiply used dispenser valve is not fully secured. Furthermore, with aircraft pressure changes, the conventional dispensers and closings are subject to leakage, whereby in the present invention, the high strength cover sheet bonding such as by thermoplastic heat sealing, avoids such leakage.

[0027] The present invention also permits the user to carry a number of personal care products in a small travel or

carry-on bag, which is not practical with the prior art relatively large volume bottles and containers.

[0028] A conventional amount of liquid personal care product single use is about 3-4 ounces. The container is thus provided with a well capable of containing at least the maximum of 4 ounces.

DETAILED DESCRIPTION OF THE DRAWINGS AND THE PREFERRED EMBODIMENT

[0029] With reference to the drawings, in **FIG. 1 a** thermoformed container cup **1** having a capacity of about 4.5 to 5 fluid ounces of liquid personal care product. The container **1** is of frusto-conical shape with a wider opening **1a** than the closed base **1b**, whereby multiple cups may be readily nested. Ledge **2** peripherally completely surrounds the opening (as more clearly seen in **FIG. 2**) with flat upper surface **2a** for heat or adhesive sealing with foil cover sheet **10**. Lower ledge surface **2b** is channel shaped for rigidity and structural strength to withstand peeling forces when the cover sheet **10** is removed therefrom (**FIG. 3**). Indent **3** is adapted to rest on the succeeding ledge **2** of a second container into which container **1** is nested, in a stack of containers used for processing. The base **1b** of the container comprises a circular recess **4** to impart further rigidity to the base of the container and to enhance standing stability.

[0030] As seen in **FIG. 3**, cover sheet **10** is printed with indicia of manufacturer and trademarks **11** and instructions **12** and container **1** is substantially filled with liquid detergent **20**, pre-measured for a single wash load. Cover sheet **10** is sized to fit on ledge **2** with tab extension **10** used to grasp the cover sheet for peeling removal, as shown. Cover sheet **10** is not redeployable and is either entirely or partially removed and the detergent **20** is poured into the wash load, as required, and the cover sheet **10** and container are discarded. With the minimal size of the containers and the standing stability thereof, they may be individually sold in vending machines use or they may be used as single use conveniences and sold in travel packs such as six-packs with an appropriate cooperative packaging or carrier.

[0031] Liquid care products within the contemplation of the present include products which contain, by way of example, cleansing agents, treatment agents, medicaments, lubricants and/or fragrances. Liquid care products within the contemplation of the present invention, particularly include liquid personal care products, including by way of example, hair shampoos, hair conditioners, hand soaps, body lotions, moisturizers, sun blocks, tanning oils, mouthwash, hair thickeners and restorers, and the like.

[0032] It is understood that the above description and drawings showing a particular embodiment are merely illustrative of the present invention and that changes may be made in the structure, components and configuration of the container and cover without departing from the scope of the present invention, as defined in the following claims.

What is claimed is:

1. A method for packaging a single use amount of a liquid personal care product in a non-closable, non-reusable, non-storable container, comprising the steps of:

- a) forming a self-standing container with an open well, of a size sufficient to contain enough liquid personal care product sufficient for a single average use, with said

well having an opening, completely peripherally bounded with a peripheral outwardly extending short ledge;

- b) filing the container with an amount of the liquid personal care product, sufficient only for about a single use;
- c) placing a cover sheet of a sealable material on the ledge around the opening of the well and enclosingly across the opening of the well and fully sealing the cover sheet to sealingly enclose the liquid personal care product within said container, wherein said cover sheet is sized to the areal dimensions of the opening of the well and the ledge therearound, and wherein a portion of the cover sheet is manually accessible for gripping in peeling off the cover sheet from the container when the liquid personal care product is to be used;

wherein the seal is of sufficient strength to resist accidental opening of the container, but wherein the seal has a low peel strength for facilitated peeling removal of the cover sheet without jerking causing spillage of the product with use leaving residue product.

2. The method of claim 1, wherein said cover sheet comprises a printed metal foil sheet with indicia of manufacturer, trademark and instructions thereon.

3. The method of claim 1, wherein said amount of liquid personal care product is up to about 4 ounces and said container is adapted for the containment thereof.

4. The method of claim 1, wherein said container comprises a frusto-conical configuration, and wherein said container comprises a closed base with a circular recessed offset therein.

5. The method of claim 1, wherein said molding comprising thermoplastic sheet thermoforming without blow molding.

6. The method of claim 1, wherein said ledge is formed with a flat upper surface adapted for heat or adhesive sealing to said cover sheet and a channeled lower surface to impart rigidity to said ledge.

7. A container, with a liquid personal care product sealingly contained therein, for single use, said container being self-standing and, formed from a leak resistant self-supporting material and having an open well, of a size sufficient to contain enough liquid personal care product sufficient for a single use, with said well having an opening, completely peripherally bounded with a peripheral outwardly extending short ledge; said container further comprising a cover sheet on the ledge around the opening of the well and enclosingly across the opening of the well and fully sealed to said ledge to sealingly enclose the liquid within said container, wherein said cover sheet is sized to the areal dimensions of the opening of the well and the ledge therearound, and wherein a portion of the cover sheet is manually accessible for gripping in peeling off the cover sheet from the container ledge when the liquid personal care product is to be used;

wherein the seal is of sufficient strength to resist accidental opening of the container, but wherein the seal has a low peel strength for facilitated peeling removal of the cover sheet without jerking causing spillage of the product or residue product.

8. The container of claim 7, wherein the personal care product is one selected from a hair care product and a skin care product.

9. The container of claim 8, wherein the hair care product is one selected from a shampoo, conditioner, restorer, thickener and cleanser.

10. The container of claim 8, wherein skin care product is one selected from a body lotion hand lotion, moisturizer, sun block, tanning lotion, body cleanser and hand cleanser.

11. The container of claim 7, wherein said ledge is formed with a flat upper surface adapted for heat or adhesive sealing to said cover sheet and a channeled lower surface to impart rigidity to said ledge.

12. The container of claim 7, wherein said cover sheet comprises a printed metal foil sheet with indicia thereon.

13. The container of claim 12, wherein said indicia is at least one selected from a manufacturer name, trademark and instructions.

14. The container of claim 7, wherein the seal is one selected from a thermoplastic seal, adhesive seal and resin seal.

15. The container of claim 7, wherein said container comprises a frustoconical body, a closed base having a circular recessed offset.

16. The container of claim 7, wherein said container is rigid to contain up to about 4 ounces of said personal care product in said single use.

17. The container of claim 7, said container comprising a thermoformed unitary thermoplastic body and said cover.

18. The container of claim 7, further comprising a travel set comprising a plurality of said containers each having a different personal care product for readily packaging as a personal care travel pack.

19. The container of claim 7, wherein the product comprises a fragrance.

20. The container of claim 7, wherein the container comprises a frusto-conical body of thermoformed unitary sheet construction.

21. A container comprising a body and a cover sheet sealing disposed on the body, with a liquid cleansing care product sealing contained therein, for single use, said container being self-standing and formed from a leak resistant self-supporting material and having an open well of a size to contain enough liquid cleansing care product for a single use, said body having a peripheral outwardly extending ledge; said cover sheet being sealingly disposed on said ledge around the opening of the well and being fully sealed to said ledge to sealingly enclose the liquid cleansing care product with the container, wherein the cover sheet is congruently sized to the areal dimensions of the opening of well and the ledge, and wherein a portion of the cover sheet is manually accessible for gripping and peeling off the cover sheet from the container body when the liquid cleaning care product is to be used; and

wherein the seal is of sufficient strength to resist accidental opening of the container but wherein the seal has a sufficiently low peel strength for manually facilitated peeling removal of the cover sheet with jerking the container to cause unwanted spillage and for readily use with residual liquid cleaning care product.

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