A pouch product assembled from a sheet that is folded to close a first end of the pouch product and opposed first and second sheet panels of the sheet bond at first marginal portions to aligned marginal portions of gusset panels to define legs and bond together at second marginal portions to define a body with a cavity for holding fluid, and a second end closes by bonding opposing second end marginal portions. A tear-open fold line and slit provide an opening for dispensing fluidal contents.
POUCH PACKAGE WITH GUSSET BASE

TECHNICAL FIELD

[0001] The present invention relates to packaging for fluid materials. More particularly, the present invention relates to pouch packages for containing fluid materials.

BACKGROUND OF THE INVENTION

[0002] Medicinal and treatment materials applied in fluid form are contained in a wide range of packages. These include containers with eye droppers for drop-by-drop dispensing, large volume containers from which the fluid is poured, and small containers holding dosage-quantity volumes.

[0003] While these containers have met the need for containing and dispensing fluids, there are drawbacks to their use. Some dispensers require two-handed operation for dispensing the fluid material. Single-handed operation however may be beneficial in dispensing fluids such as eye drops or mouth-receiving medicants, for example. In addition, containers that may stand up are useful so that the container may stand at rest on a horizontal surface without dripping or leaking yet be open for use. Perimeter-sealed containers that lie on a side may taint the orifice by contact with surface contamination and may experience dripping or leaking if open.

[0004] Eye dropper type dispensers require squeezing a resilient bulb in order to create a vacuum for drawing fluid into a tube. The user continues to hold the resilient bulb in preparation of administering the fluid. The bulb, if squeezed however, may cause the fluid to dispense from the tube prematurely. This may create a mess as well as inaccurate dosing.

[0005] Accordingly, there is a need in the packaging industry for an improved disposable container for holding and dispensing fluids. It is to such that the present invention is directed.

BRIEF SUMMARY OF THE INVENTION

[0006] The present invention meets the need in the art for an improved package to contain and dispense fluids. More particularly, the present invention provides a pouch package for a fluidal product, comprising a sheet with opposed first and second sheet panels and an intermediate gusset therebetween having first and second gusset panels that each extend from an edge of a respective one of the first and second sheet panels. The sheet, folded in a first direction on a medial line, forms an interior edge and, folded in an opposing second direction on respective second lines defined by the edges between the respective gusset panel and the respective sheet panel, brings the opposed first and second sheet panels together, thereby closing a first end of a pouch package. Respective opposing first marginal portions of the respective sheet panel bond to a respective opposing marginal portion of the respective first or second gusset panel aligned therewith and define opposing first and second legs of the pouch package. Respective opposing second marginal portions of the first sheet panel bond to respective opposing second marginal portions of the second sheet panel aligned therewith and define a body portion. The bonded marginal portions thereby close opposing sides of the pouch package and define a cavity between the first and second sheet panels in the body portion and between the respective gusset panel and the respective sheet panel in the opposing first and second legs. A second end closes by bonding the opposing first and second sheet panels along opposing second end marginal portions, the cavity receiving a fluidal material before sealing the second end of the pouch package.

[0007] Objects, features, and benefits of the present invention will become apparent upon reading the following detailed description in conjunction with the drawings and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 illustrates in plan view a die cut sheet for a pouch package with a gusset base in accordance with the present invention.

[0009] FIG. 2 illustrates in perspective view a pouch package with a gusset base assembled from the die cut sheet illustrated in FIG. 1.

[0010] FIG. 3 illustrates in perspective view a neck portion of the pouch package illustrated in FIG. 2 with an edge folded on fold line to expose a cut line for tearing an opening in the pouch package for dispensing fluid.

[0011] FIG. 4 illustrates in perspective view the pouch package illustrated in FIG. 2 standing on a counter and opened for use.

[0012] FIG. 5 illustrates in side elevational view single-handed operation of the pouch package illustrated in FIG. 2.

[0013] FIG. 6 illustrates the pouch package illustrated in FIG. 2 being held on a grip portion prior to dispensing fluid.

[0014] FIGS. 7A and 7B illustrate the pouch package oriented for dispensing fluid.

DETAILED DESCRIPTION

[0015] With reference to the drawings, in which like parts have like identifiers, FIG. 1 illustrates in plan view a sheet 20 that assembles as a pouch package 22 (see FIG. 2) with a gusset base 24 in accordance with the present invention. The sheet 20 may be die-cut from a continuous roll-fed web generally 18 during assembly manufacturing. The sheet 20 includes opposing first sheet panel 26 and second sheet panel 28 with an intermediate gusset 30 therebetween. The gusset 30 has a first gusset panel 32 and a second gusset panel 34. The first and second sheet panels 26, 28 are mirror structures as are the first and second gusset panels 32, 34.

[0016] The first and second gusset panels 32, 34 each extend from a respective edge 36 at a first end of a respective one of the first and second sheet panels 26, 28. The gusset 30 includes a medial line 38 on which the gusset folds in a first direction to form an interior edge 39 and to close a portion of the first end of the pouch package 22. The respective edge 36 between the gusset panel 32, 34 and the respective sheet panel 26, 28, defines second lines on which the sheet 20 folds in a second opposing direction. The first fold and the second fold forms a first closed end at edge 36 and edge 39 of the pouch packaging 22.

[0017] The sheet panels 26, 28 include first and second opposing marginal portions 40, 42. The first marginal portion 40 extends from the edge 36 a length equal to the length of the respective gusset panel 32, 34 between the medial line 38 and the edge 36. The gusset panels 32, 34 also include respective opposing marginal portions 46 between the medial line 38 and the edges 36. The marginal edges 40 and 46 proximate the edge 36 defines a grip 43 when the die sheet 20 is assembled to form the pouch package. The grip 43 provides a place to hold the pouch package 22 prior to and during use.

[0018] The second marginal portion 42 extends therefrom to a second edge 44. The second end 44 of the sheet panels 26,
28 includes a marginal portion 52. The marginal portions have an exterior edge 48 and an interior edge 50 with a seal area therebetween. The exterior edge 48 defines a packet die line for cutting the sheet 20 from the film 18. A line 51 lateral of the exterior edge 48 illustrates a print bleed line conventional in the art.

[0019] The interior edge 50 in the second marginal portion 52 may define a neck or channel 58. The marginal portion 52 may as illustrated extend laterally as a field 60. The field 60 defines a fold line 62 and a slit 64 that goes through the sheet panel (see FIG. 2, as both of these features are formed in-line when the pouch package is filled during assembly). The slit 64 defines an acute angle relative to the fold line 62 in a direction that the tear generally proceeds to open the pouch package 22.

[0020] FIG. 2 illustrates in prospective view the pouch package 22 with the gusset base 24 assembled from the die cut sheet 20 illustrated in FIG. 1. With reference to FIGS. 1 and 2, the pouch package 22 includes first and second legs 70, 72 and a body portion 74. Generally, opposing marginal portions bond together, such as by heat and pressure, or adhesively, depending on the material of which the die sheet is formed. The die sheet may be a film or a laminate.

[0021] The first marginal portions 40 of the respective sheet panel 26, 28 bond to opposing respective marginal portions of the respective first or second gusset panel 32, 34 aligned therewith and define the opposing first and second legs 70, 72 of the pouch package 22. The respective opposing second marginal portions 42 of the first sheet panel 26 bonds to respective opposing second marginal portions 42 of the second sheet panel 28 aligned therewith and define the body portion 74. The bonded marginal portions thereby close opposing sides of the pouch package 22. This defines a cavity 76 between the first and second sheet panels 26, 28 in the body portion 74 and between the respective gusset panel 32, 34 and the respective sheet panel 26, 28 in the opposing legs 70, 72. The interior edge 39 and the edges 36 close the first end of the pouch package 22.

[0022] The gusset panels 32, 34 define an inward surface of the legs 70, 72 between the edge 36 and the respective edge 36. The portion of the sheet panel 26, 28 joined at marginal portions 40 to the respective gusset panel 32, 34 define the curvature of the legs 70, 72. The folded interior edge 39 defines an apex of the legs 70, 72. The respective folded edges 36 define a foot for the respective legs 70, 72.

[0023] The second end 44 closes by bonding the opposing first and second sheet panels 26, 28 along opposing second end marginal portions 52. The cavity 76 receives a fluidal material before sealing the second end 44 of the pouch package 22. The fold line 62 and the slit 64 are defined the pouch package 22 during filling operations.

[0024] The pouch package 22 may have arcuate marginal edges 50 in the legs 70, 72 and the body 74, as shown in the illustrated embodiment. The interior edges 50 of the marginal portion in the legs 70, 72 have a first radius and the interior edges of the marginal portions of the body 74 have a second radius. The second radius differs from that of the first radius. A second radius less than the first radius provide a tapered cavity 76.

[0025] Similarly, the exterior edges 48 of the marginal portions in the legs 70, 72 and the body 74 may be arcuate. The exterior edges 48 in the legs 70, 72 have a first radius and the exterior edges in the body 74 have a second radius. The second radius differs from that of the first radius. The radius in the first marginal portion 40 may differ from the radius in the second marginal portion 42.

[0026] FIG. 3 illustrates in prospective view the pouch package 22 being gripped in the flag 60 near the neck 58. The marginal portion 52 folds on the fold line 62 to expose a cut line at the slit 64 for tearing an opening 63 in the pouch package 22 for dispensing fluid. FIG. 3 however illustrates as an alternate embodiment a plurality of microperf openings 67 in the field 60, rather than the slit 64, for opening the pouch package 22. The fold line 62 may be used optionally with the microperf openings 67. The microperf openings 67 facilitate tearing through the field 60 and directing the tear across the neck 58.

[0027] FIG. 4 illustrates in prospective view the pouch package 22 open and standing on a horizontal surface 65 such as a table or countertop, with the legs 70, 72 splayed apart. The gusset 30 cooperatively defines with the respective first and second sheets and gusset panels 26, 32 and 28, 34 the legs 70, 72 (respectively) as first and second (or front and back) flaps of the cavity 76. When the cavity 76 is filled with product, the legs 70, 72 become structurally firmer. The structural firmness is sufficient that when the pouch package 22 is open, the legs 70, 72 may be splayed apart as a stand. The pouch package 22 may be placed at rest on a horizontal surface 65 such as a countertop or tabletop without dripping and without tainting the opening 63 by contact.

[0028] The pouch package 22 features operability with a single-handed squeeze by a person seeking to dispense the contents, as illustrated in side elevational view in FIG. 5. The opposing frontal (or outward) areas of the first and second panels 26, 28 fit between a thumb and forefinger of the person. The gusset 30 facilitates operation of the pouch package 22 as a bellows. With the primary seal opened at opening 63 as discussed above, a squeeze then evacuates the contents from the cavity 76 without the need to sweep product forward towards the opening.

[0029] FIG. 6 illustrates the pouch package 22 being held on one of the grips 43 prior to dispensing fluid. The open pouch package 22 may be held on one of the grip portions 43 prior to dispensing the contents. The grip 43 enables a person to convey the dispensing neck 58 of the pouch package 22 as a spout to a person who is to receive the contents; for example, a parent providing a medicinal material from the pouch package. One of the grips 43 may be held and squeezed during positioning of the opening 63 to the child’s mouth without applying pressure to the product within the cavity 76 and prematurely spilling or dispensing the contents.

[0030] The structure of the pouch package 22 further provides self-collapsing features. FIGS. 7A and 7B illustrate the pouch package 22 oriented for dispensing the contents from the cavity 76. A person administering the medicinal contents for example, raises the pouch package 22 above horizontal with opening 63 orientated downwardly. The gusset 30 allows the pouch package 22 to function as a rigid vessel, and the product within the cavity 76 flows outwardly through the opening 63. Additionally, with suction applied to the pouch package 22 through the opening 63, the pouch package collapses in a way that eliminates, or reduces residual product.

[0031] The package structure accommodates a range of volumes with the same overall package size. This accommodation may be accomplished in one aspect by adjusting the width of the sealed marginal portions. A narrower gap between the interior edge 50 and the exterior edge 48 provides a larger volume cavity (while the overall exterior dimensions...
of the alternate volume pouch packages are the same). Also, the overall width of the pouch package 22 may be the same for different volumes which are attained by changing the length of the sheet panels 26, 28 between the edges 36 and 44 and/or changing the size of the gusset 30. Consistent exterior dimensions, notwithstanding volume differences, enables cartons or containers of product to be a uniform size across a product line. This may provide logistical and product cost overhead benefits. Also, integrated graphics and instructions readily print on the film. This obviates misplacement of printed instruction sheets, reduces product costs, and assures that the person is provided with meaningful use instructions at the point of use.

[0032] The pouch package 22 further encloses the cavity 76 that may include vacant space, which facilitates opening of the spout or neck 58 without pressurizing the contents, enables conveying the product to the user without pressurizing the contents, and allows holding the pouch package between the lips without pressurizing the contents.

[0033] This specification has described the present invention that provides a pouch package having the cavity in the body portion and legs portion for holding fluid, including the steps necessary for making and using various embodiments thereof. It is to be understood, however, that numerous changes and variations may be made in the construction of the present pouch package within the spirit and scope of the present invention, and that modifications and changes may be made therein without departing from the scope thereof as set forth in the appended claims.

What is claimed is:

1. A pouch package for a fluid product, comprising: a sheet with opposed first and second sheet panels and an intermediate gusset therebetween having first and second gusset panels that each extend from an edge of a respective one of the first and second sheet panels, folded in a first direction on a medial line to form an interior edge and folded in an opposing second direction on respective second lines defined by edges between the respective gusset panel and the respective sheet panel to bring the opposed first and second sheet panels together, thereby closing a first end of a pouch package; the pouch package comprising first and second legs and a body portion, respective opposing first marginal portions of the respective sheet panel bonded to a respective marginal portion of the respective first or second gusset panel aligned therewith to define the opposing first and second legs of the pouch package, and respective opposing second marginal portions of the first sheet panel bonded to respective opposing second marginal portions of the second sheet panel aligned therewith to define the body portion, whereby dosing opposing sides of the pouch package and defining a cavity between the first and second sheet panels in the body portion and between the respective gusset panel and the respective sheet panel in the opposing legs; and a second end closed by bonding the opposing first and second sheet panels along opposing second marginal portions, the cavity receiving a fluid material before sealing the second end of the pouch package.

2. The pouch package as recited in claim 1, further comprising means for opening the pouch package.

3. The pouch package as recited in claim 2, wherein means for opening comprises a tear line defined in the second end by a plurality of microperf openings.

4. The pouch package as recited in claim 2, wherein means for opening comprises: a fold line extending through the second end; and a slit in the second end that intersects the fold line, whereby the second end being folded on the fold line exposes a cut edge for tearing open the pouch package.

5. The pouch package as recited in claim 1, wherein the second end defines a seal bonded portion and an elongated neck open to the cavity, whereby opening the pouch package across the neck defines a pathway for flow of the fluidial material from the cavity.

6. The pouch package as recited in claim 5, further comprising means for opening the second end.

7. The pouch package as recited in claim 6, wherein means for opening comprises a tear line defined in the second end by a plurality of microperf openings.

8. The pouch package as recited in claim 6, wherein means for opening comprises: a fold line extending through the second end; and a slit in the second end that intersects the fold line, whereby the second end being folded on the fold line exposes a cut edge for tearing open the pouch package.

9. The pouch package as recited in claim 1, wherein a perimeter portion of the bonded opposing marginal portions of the gusset panels and sheet panels define in each leg a pair of opposing grips, whereby the package may be held and squeezed on the grip without applying pressure to the fluid within the cavity.

10. The pouch package as recited in claim 5, wherein a portion of the second end extends as a field lateral of the neck.

11. The pouch package as recited in claim 10 wherein the field defines a slit for tearing open the pouch package.

12. The pouch package as recited in claim 11, further comprising a fold line within at least the field and the slit intersects the fold line, whereby the second end being folded on the fold line exposes a cut edge for tearing open the pouch package.

13. The pouch package as recited in claim 12, wherein the slit comprises a first slit that defines a first angle relative to the fold line and a second slit mirroring the first slit.

14. The pouch package as recited in claim 13, wherein the first slit is on a first side of the fold line and the second slit is on a second side of the fold line.

15. The pouch package as recited in claim 1, wherein the bonded marginal portions in the legs and the body define interior edges that are arcuate.

16. The pouch package as recited in claim 15, wherein the interior edges of the marginal portion in the legs have a first radius and the interior edges of the marginal portions of the body have a second radius, the second radius less than the first radius.

17. The pouch package as recited in claim 15, wherein exterior edges of the marginal portions in the legs have a first radius and the exterior edges of the marginal portions in the body have a second radius, the second radius less than the first radius.

18. The pouch package as recited in claim 1, wherein the sheet is one of a plurality of sheets die cut from an elongated film of material.

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