A lid for drinking cups includes: a unitary body including a spout and a hood formed of silicone, the hood including a cylindrical portion configured to completely surround and cover the top rim on a variety of different size drinking cups preventing liquids from spilling out, wherein the hood includes a plurality of circumferentially disposed grips in the form of ridges and valleys.
UNIVERSAL LID FOR DRINKING CUPS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present invention relates generally to lids for drinking cups and, more particularly, to universal sipping lids made of silicone for various size glass, plastic and metal drinking cups. This application incorporates by reference and claims priority to U.S. Provisional Patent Application No. 62/011,430, filed on Jun. 12, 2014.

BACKGROUND OF THE INVENTION

[0002] In the past, drinking cups were primarily made of glass and typically did not come with drinking and sipping lids. Glass drinking cups were generally effective, however they had their shortcomings. If a glass drinking cup without a lid falls over, the liquids inside spill out, and, because the drinking cup is glass, the glass itself may break. As a result, a child or adult could knock over a glass drinking cup, spill the contents, and possibly be injured due to the breakage of glass. Because of the probability of breakage, many parents do not like to use glass drinking cups for their children. And, because glass cups usually do not contain lids, if parents choose to use glass drinking cups, they worry about the child spilling the drink. There are some glass cups that include a snap on silicone lid designed specifically for the cup, but the lids are not secure enough to prevent liquids from spilling out and can easily pop off the cup, leaving the rim of the glass unprotected.

[0003] More recently, individuals have been using plastic drinking cups with lids, because plastic cups are more common, relatively inexpensive, come with sipping straws or lids, and are less susceptible to breaking when compared to glass drinking cups. Some plastic drinking cups offer custom fit lids. These lids are generally effective, however, shortcomings exist. For example, some of these drinking lids are made of plastic and screw onto, or snap onto, the plastic cup. These lids are custom fit and cannot be used with other cups. In addition, these lids can be difficult to get on and off and do not always stay in place. Many times these lids are not leak proof. Some lids for plastic drinking cups are meant for young children and incorporate a sipping spout or straw mechanism that only fits the specific corresponding plastic drinking cup and can not be used with other plastic, glass, or metal cups.

[0004] However, recent research has shown that plastic drinking cups and plastic lids might not be as safe as once believed. For example, many plastic cups and plastic sipping lids for kids and adults have been found to contain certain toxic chemicals, such as BPA, that tend to leach into the fluid contents of the cup. Even low doses of these chemicals have been linked to the altering of genes in the human body, which can then lead to health risks such as diabetes, altered immune system, and early puberty.

[0005] Therefore, there is a need for a universal, non-toxic, sipping lid that fits a variety of different size glass, plastic, and metal drinking cups, taking the shape of that said cup, providing a tight and protective fit, preventing liquids from leaking and spilling, while also protecting the rim of a glass drinking cup from breaking on impact. The present invention fulfills these needs and others.

BRIEF SUMMARY OF THE INVENTION

[0006] Briefly, and in general terms, the present invention provides a lid including a molded body formed of resilient material with elastic properties, such as silicone, to mate with a variety of a glass, plastic, and metal drinking cups. The body of the lid is a cylindrical configuration adapted to circumscribe the side walls of the drinking cup. Because the lid is elastic, it is able to take the shape of a variety of sizes and shapes of drinking cups. When placed over the open mouth of a drinking cup, the body of the lid covers the top portion of the drinking cup, extending over and down below the rim of the drinking cup.

[0007] In a primary example, the portion of the lid that extends below the rim of the drinking cup acts as a hood that adheres the lid to the drinking cup and prevents the lid from accidentally coming off.

[0008] In another example, the lid includes a raised spout near the edge of the body for sipping liquids from the drinking cup. Alternately the sipping spout can be a nipple, a straw, or another access point through the lid.

[0009] More particularly, in some examples, the lid provides a unitary molded body, spout, and hood formed of a silicone material. The lid further includes a non-toxic finish, such as, HS-4, XC9603, YC6831, made by GE Toshiba Silicone, disposed on substantially the entirety of an inner surface of the molded lid, which allows the lid to be easily taken on and off. Because of this feature, the lid is easily removable for cleaning and reusing with other drinking cups.

[0010] In one example, the molded body of the lid is formed of translucent resilient material such that one can observe the level of the contents within the cup.

[0011] Although many ranges of thicknesses may be used, in one example, the molded body of the lid has a thickness between about 1 mm and about 5 mm.

[0012] In another example, the molded hood of the lid is disposed below the circumference of the drinking cup rim by about 1 to 1.5 inches and has a generally smooth cylindrical configuration, which facilitating its use with drinking cups from a variety of manufacturers. In this manner, the lid can conform to the shape of the drinking cup and accommodate cups with varying rim circumferences.

[0013] In another example, the molded hood includes small nubs about 1 to 5 mm in height to improve the grip and shock absorption around the rim and sides of drinking cup, which gives added protection to the rim of the drinking cup when the lid is in place.

[0014] In one example, a lid for drinking cups includes: a unitary body including a spout and a hood formed of silicone, the hood including a cylindrical portion configured to completely surround and cover the top rim on a variety of different size drinking cups preventing liquids from spilling out, wherein the hood includes a plurality of circumferentially disposed grips in the form of ridges and valleys. The spout may be a valve through which a straw may be placed. The silicone may be translucent such that contents of a drinking cup can be seen when the lid is in place over the rim of the drinking cup. The cylindrical portion may take the shape of various drinking cups onto which it is placed.

[0015] In a preferred embodiment, the lid includes a high slip coating disposed on an inner surface of the body. The high slip coating may include HS-4, XC9603, and YC6831. When the lid is placed on a drinking cup, the hood portion covers the rim of the drinking cup and extends down over the side walls of the drinking cup 1 to 1.5 inches and the body has a thickness between about 1 mm and about 5 mm.

[0016] The cylindrical portion may further include a plurality of nubs aiding a user when gripping the lid.
For purposes of summarizing the invention, certain advantages of the invention have been described herein. Of course, it is to be understood that not necessarily all such advantages may be achieved in accordance with any particular embodiment of the invention. Thus, for example, those skilled in the art will recognize that the invention may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other advantages as may be taught or suggested herein. Moreover, a number of features are discussed throughout the specification with reference to particular embodiments. Nonetheless, those skilled in the art will appreciate that various other embodiments can be provided without departing from the scope of the invention, to include any and all combination of features discussed.

These and other embodiments of the present invention will become readily apparent to those skilled in the art from the following detailed description of the preferred embodiments having reference to the attached figures, the invention not being limited to any particular embodiment disclosed, except as provided by the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawing figures depict one or more implementations in accord with the present concepts, by way of example only, not by way of limitations. In the figures, like reference numerals refer to the same or similar elements.

FIG. 1 is a bottom view of a lid of the present invention.

FIG. 2 is a side view of the lid shown in FIG. 1.

FIG. 3 is a side view of the lid shown in FIG. 1 placed over the top portion of a drinking cup.

FIG. 4 is a perspective view of another lid of the present invention shown in use with another drinking cup.

FIG. 5 is a bottom view of the lid shown in FIG. 4.

FIG. 6 is a side view of the lid shown in FIG. 4.

FIG. 7 is a perspective view of a drinking cup, a silicone sleeve, and a lid of the present invention.

FIG. 8 is a perspective view of the elements shown in FIG. 7 in a fully assembled form.

FIG. 9 is a side view of the lid shown in FIG. 7.

FIG. 10 is a perspective view of a lid including a valve for a drinking straw.

FIG. 11 is a side view of the lid shown in FIG. 10.

FIG. 12 is a top view of the lid shown in FIG. 10.

FIG. 13 is a cross-sectional side view of the lid shown in FIG. 10.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, in particular FIG. 1, a lid 16 is shown embodying inventive aspects of the present disclosure. As shown, the lid 16 includes a hood 11 and a spout 10. The hood 11 is intended to wrap over and around the open mouth of a drinking cup 12 to seal a liquid within. The spout 10 enables a user to drink the liquid sealed within the cup 12.

As shown, the lid 16 includes a venting hole 8 for venting the interior of a cup 12 over which the lid 16 is placed. This enables the spout 10 to operate more efficiently. The spout 10 includes holes 9 through which liquids may be sipped. Also shown, grips 7 are disposed on the side portion of a hood 11 to provide users with an improved grip and to help protect the rim 19 of the drinking cup 12, which is particularly useful when the cup 12 is a glass cup 12. The lid 16 is configured to provide an airtight seal to the outer surface of various size drinking cups 12 to prevent liquids from spilling out of the cups 12 when the lid 16 is in place.

Although various sizes may be used, in the example shown, the spout is approximately 1 to 1.5 inches in height and the hood 11 has a thickness of approximately 1 to 1.5 mm.

Turning now to FIG. 2, the grips 7 of the lid 16 are configured as raised dots arranged in patterns around the hood 11. In the example shown, the grips 7 are shown in arc patterns, though the grips 7 may vary in number and may be arranged in an array of shapes and sizes. For example, in other embodiments, the grips 7 can be formed by recesses, or ridges, channels, or other variations of thickness of the hood 11 to provide increased grip for the user and shock absorption to protect the rim of a drinking cup 12. The grips 7 may be strategically placed to help assist the user in gripping and maintaining grip on the drinking cup 12. In one embodiment, the grips 7 have a rounded shape, but the grips 7 may also come in a variety of other shapes (e.g., square, triangular, rectangular, etc.).

The hood 11 of the lid 16 is meant to conform to various sizes of drinking cups 12 to keep the lid 16 snugly fit, to stay in place, and to prevent liquids from spilling out of the cups 12. Further, in the example shown in FIG. 2, the sipping spout 10 and hood 11 of the lid 16 are one-piece, whereby the sipping spout 10 is approximately 1 to 2 inches in height and the total height of the lid 16 is 2 to 2.5 inches in height. Of course, the sizes and relative proportions of the elements of the lid 16 may be adapted to fit varying sizes of drinking cups 12, as will be appreciated by those skilled in the art based on the disclosures provided herein.

Turning back to FIG. 1, the hood 11 defines an opening 18 that allows the lid 16 to slide over various drinking cups 12. The opening 18 stretches to take the shape of various drinking cups 12 to secure the lid 16 about the upper portion of the drinking cup 12. In the example shown, the opening 18 has a diameter of about 2.5 inches. However, the diameter of the opening 18 can vary to match various sizes of drinking cups 12.

Turning now to FIG. 3, the hood 11 of the lid 16 allows the lid 16 to be pulled over the rim 19 of the drinking cup 12 to snugly fit around the drinking cup 12 and provide complete protection around the rim 19. The lid 16 may be adapted to fit a wide range of drinking cups 12, while maintaining its basic structure and quality.

In the example shown, the lid 16 is formed of a medical-grade silicone material that is durable, yet flexible, to enable repeated placement and removal of the lid 16 onto and from the drinking cup 12. The elasticity of the lid 16 allows it to be stretched and pulled and still fit snugly around the drinking cup 12. The silicone material also allows the lid 16 to have a resilient quality, which enables the lid 16 to spring back to its original shape even after it is temporarily warped.

The lid 16 further includes a high slip coating applied to its inner surface. The coating may include a phthalate material, such as phthalate esters. In a preferred embodiment, the high slip coating comprises a three-component system including HS-4 (silicone base), X68303 (adhesion promoter), and YC6831 (catalyst and solvent). These mixtures can be obtained as pre-mixed formulations from GE Toshiba. The high slip coating may be disposed on substantially the entire inner surface of the hood 11, which helps the lid 16 to be easily secured to and removed from the drinking cup 12.
In the example shown, the lid 16 is formed through an injection molding process to produce a lid 16 formed from a single piece of silicone. Thus, the lid 16 shown in FIG. 1 is a continuous, unitary structure. However, other processes and materials can be used to obtain the advantage and objectives of the invention.

FIG. 4 represents a second embodiment of a lid 16. This example of the lid 16 includes a spout 10 in the shape of a bottle nipple and a hood 11 that allows the lid to be attached in place of the rim 19 of the drinking cup 12 to snugly fit around the drinking cup 12 and provide complete protection around the rim 19. The lid 16 provides a spout 10 in the shape of a bottle nipple to allow babies to sip out of a drinking cup 12 instead of a baby bottle. The lid 16 may be adapted to fit a wide range of drinking cups 12, while maintaining its basic structure and quality.

FIG. 5 is a bottom view of the lid 16 shown in FIG. 4. The lid 16 includes a nipple-shaped spout 10 that is approximately 1 to 1.5 inches in height and includes a hole 13 through which liquid may be sipped. As further shown, grips 7 are disposed on the side portion of the hood 11 to provide improved grip and to help protect the rim 19 of the drinking cup 12, specifically a glass cup 12. The example shown, the hood 11 has a thickness of approximately 1 to 1.5 mm and the lid 16 is configured to provide an fluid tight fit onto the outer surface of various size drinking cups 12 to prevent liquids from spilling out.

As shown in FIG. 6, the grips 7 of the lid 16 are configured as raised dots arranged in patterns. The grips 7 may vary in number and may be arranged in an array of shapes and sizes. For example, in other embodiments, the grips 7 can be formed by recesses, or ridges, channels, or other variations of thickness of the hood 11 to provide increased grip for the user and shock absorption to protect the rim 19 of the drinking cup 12. The grips 7 are strategically placed to help assist the user in gripping and maintaining grip on the drinking cup 12. In the embodiment shown, the grips 7 have a rounded shape, but they may also come in a variety of other shapes (e.g., square, triangular, rectangular, etc.).

In the example shown in FIG. 6, the hood 11 of the lid 16 is meant to conform to various sizes of drinking cups 12 to keep the lid 16 snugly in place and prevent liquids from spilling out. The spout 10 and hood 11 of the lid 16 are all one piece whereby the spout 10 is approximately 1 to 2 inches in height and the total height of the lid 16 is 2 to 2.5 inches in height. Of course, the sizes and relative proportions of the elements of the lid 16 may be adapted to fit varying sizes of cups 12, as will be appreciated by those skilled in the art based on the disclosures provided herein.

FIG. 7 shows another example of a lid 16 in which the grips 7 are embodied in ridges 21 and valleys 22 circling the perimeter of the hood 11. As shown, the lid 16 may be used with a cup 12 and a silicone sleeve 23, such as the silicone sleeve taught in U.S. Pat. No. 8,978,906 B2, the entirety of which is incorporated herein by reference, to fully enclose the cup 12 within a silicone shell formed by the combination of the lid 16 and the sleeve 23. This configuration, shown in FIG. 8, completely secures and protects a glass cup 12 within the protective silicone shell.

FIG. 9 shows another example of a lid 16 in which the hood 11 extends even further down the side of the cup 12. This example of the lid 16 includes grips 7 embodied in the form of ridges 21 and valleys 22, as well as bumpy knobs 24.

FIG. 10 shows yet another example of a lid 16 in which the spout 10 is a valve 25 adapted for use with a drinking straw. The embodiment shown in FIG. 10 is adapted to turn any cup 12, whether plastic, glass, metal, etc., into a straw-top cup in seconds.

FIGS. 11-13 show the lid 16 of FIG. 10 from the side (FIG. 11), top (FIG. 12), and as a side cross-section (FIG. 13). These figures help to further illustrate the configuration of the example shown in FIG. 10. In this example, the outer diameter of the lid 16 is approximately 42 mm. The inner diameter of the hood 11 is approximately 40 mm, which means the walls of the hood 11 are approximately 1 mm thick, ranging between 0.7 mm in the valleys 22. 1 mm at the ridges 21, and wall thickness up to 1.5 mm in other areas, for example surrounding the spout 10. The height of the hood 11 is approximately 40 mm. This specific configuration of the lid 16 may be most useful for pairing with cups 12 having a rim 19 with a diameter between an inch and a half and three inches. Increasing the height of the hood 11 may enable the lid 16 to pair with wider mouth cups 12. Narrowing the inner diameter of the hood 11 may enable the lid to pair with narrower mouth cups 12.

Particularly with the embodiments of the lid 16 shown in FIGS. 7-13, the circumferential ridges 21 and valleys 22 make the lid 16 well adapted to seamlessly pair with cups 12 of varying dimensions. These configurations of the lid 16 are well-suited to provide a secure fit with all sorts of sizes of cups 12.

It should be appreciated from the foregoing that the present invention provides a universal lid for drinking cups configured to protect the drinking cup rim, to facilitate gripping, and to enable various size drinking cups to take a universal sipping lid to prevent liquids from spilling.

It should be noted that various changes and modifications to the presently preferred embodiments described herein will be apparent to those skilled in the art. Such changes and modifications may be made without departing from the spirit and scope of the present invention and without diminishing its attendant advantages.

We claim:
1. A lid for drinking cups comprising: a unitary body including a spout and a hood formed of silicone, the hood including a cylindrical portion configured to completely surround and cover the top rim on a variety of different size drinking cups preventing liquids from spilling out, wherein the hood includes a plurality of circumferentially disposed grips in the form of ridges and valleys.
2. The lid of claim 1 wherein the spout is a valve through which a straw may be placed.
3. The lid of claim 1 wherein the silicone is translucent such that contents of a drinking cup can be seen when the lid is in place over the rim of the drinking cup.
4. The lid of claim 1 wherein the cylindrical portion takes the shape of various drinking cups onto which it is placed.
5. The lid of claim 1 further comprising a high slip coating disposed on an inner surface of the body.
6. The lid of claim 5 wherein the high slip coating includes HS-4, XC9603, and YC6831.
7. The lid of claim 1 wherein the lid is placed on a drinking cup and the hood portion covers the rim of the drinking cup and extends down over the side walls of the drinking cup 1 to 1.5 inches.
8. The lid of claim 1 wherein the body has a thickness between about 1 mm and about 5 mm.

9. The lid of claim 1 wherein the cylindrical portion includes a plurality of nubs aiding a user when gripping the lid.