The present invention relates to a product for daily life, and more particularly, to a container for covering a PET bottle that is capable of providing thermal insulation effects for the beverage contained in the PET bottle. The container for covering a PET bottle includes: a cap adapted to cover the upper portion of the PET bottle; and a body adapted to be coupled with the cap and to cover the lower portion of the PET bottle. As the container for covering a PET bottle forms a double bottle structure together with the PET bottle therein, the container can prevent a neighboring object or a user's hand from coming into contact with condensed water generated due to dew condensation or the outer surface of the PET bottle which is carried, thereby keeping the neighboring object or user's hand from getting wet or keeping dirt from becoming attached to the PET bottle. Also, as the container has thermal insulation effects, warm or cold beverages remain drinkable over an extended time period. In addition, the container can be generally used for most of plastic beverage bottles on the market.
FIG. 3
CONTAINER FOR PET BOTTLE

TECHNICAL FIELD

0001. The present invention relates to a product for daily life, and more particularly, to a container for covering a PET bottle containing beverage so as to have thermal insulation effects.

BACKGROUND ART

0002. PET bottles are widely used as packaging vessels for water or beverages. They are made out of polyethylene terephthalate (PET) material, and are light and not easily breakable. Since they are recyclable, they give less damage to the environment.

0003. The PET bottles (the term “PET bottle,” as used in this specification, refers to not only the bottles made out of PET material but also all kinds of PET bottles) are generally constructed of a neck formed on an upper portion of the body, a mouth formed at the neck, and a cap adapted to seal the mouth. Due to certain needs during the manufacturing process, most of PET bottles for water or other beverages have a rounded flange formed around the neck with predetermined thickness and width. Further, the mouth of a typical PET bottle for beverage is standardized in size in accordance with its capacity.

0004. Generally, when water or beverage (hereinafter, collectively referred to as “beverage”) is contained in the PET bottle, the cap is opened to drink the beverage retained in the PET bottle, but in most cases, the bottle is first stored in a refrigerator so as to drink cold beverage. Further, to drink cold beverage during outdoor activities such as climbing, fishing, and watching sports games in summer season, the beverage contained in the PET bottle is first frozen in a freezer. It the PET bottle is carried after freezing the beverage contained therein, it takes a long time to melt the frozen beverage and a user can drink the cold beverage for an extended period of time.

0005. When a PET bottle containing beverage is used after freezing the beverage in summer, a large amount of dew condensation is generated around the outer surface of the PET bottle due to the temperature difference between the inside and outside of the PET bottle. Accordingly, when the frozen PET bottle is put in a bag or carried by a user’s hand, condensed water causes wetness of a neighboring object or the user’s hand or causes dirt or filth to attach to the PET bottle.

0006. Moreover, if the PET bottle is used after the beverage contained in the PET bottle has been frozen, the heat transfer through a relatively thin wall of the PET bottle is active and causes the frozen beverage in the PET bottle to melt at a fast speed, thereby making it impossible to drink the cold beverage for a long time. Likewise, if the PET bottle is used to contain warm beverage, the warm beverage cools down fast.

0007. Japanese Patent No. 2004-217275 discloses a heat insulating container for receiving a beverage container, which is a container made of metal having a cap openable at the bottom portion thereof and which is brought into close contact with the top and underside of the beverage container to form a double bottle structure. However, since the bottom of the beverage container must fit exactly with the bottom surface of the heat insulating container, it can only be used for beverage containers having specific sizes and shapes.

DETAILED DESCRIPTION OF INVENTION

Technical Problem

0008. As mentioned above, a typical PET bottle has problems of: causing wetness of a neighboring object or a user’s hand or making dirt to attach to the PET bottle when the PET bottle is stored or carried in a frozen state during the summer season due to the condensed water generated on the outer surface of the PET bottle; inability to keep ice inside the PET bottle for a long period of time; and causing water to cool down fast if the PET bottle is used to contain warm beverage. Therefore, there is a need for an insulation mechanism that prevents a neighboring object or a user’s hand from getting wet caused by condensed water when carrying a frozen PET bottle and that can maintain the ice inside the PET bottle for a long period of time.

0009. In addition, although the shapes and sizes of PET bottles are similar for the same capacity (e.g., 500 ml), their sizes (especially, the heights) and shapes are slightly different from one manufacture to another. Therefore, there is a need for a covering container that can be universally used for most of PET beverage bottles on the market.

Technical Solution

0010. A container for covering a PET bottle according to the present invention is made to solve the above-mentioned technical problems and includes a cap adapted to cover the upper portion of the PET bottle, a body that couples to the cap and covers the remaining portion of the PET bottle. At an upper hole of the cap is provided with an upper coupling portion that closely contacts with the upper portion of the PET bottle to couple to the PET bottle.

0011. Together with the PET bottle disposed inside, the container forms a double bottle structure having an air layer with a predetermined thickness and is firmly coupled to the flange formed in the neck of the PET bottle.

0012. Here, the cap and the body of the container may be coupled to each other through a screw-fitting, and a coupling mechanism is provided on the mouth portion of the cap for coupling with the flange of the PET bottle.

0013. Further, at the bottom of the body of the container is provided with a dish-shaped support plate having an elastic member that pushes the PET bottle upwardly.

Advantageous Effect

0014. According to the present invention, as mentioned above, the container for a PET bottle prevents the condensed water generated on the outer surface of the PET bottle from causing a neighboring object or the user’s hand to get wet while the frozen PET bottle is carried and also prevents dirt from being attached to the PET bottle. Furthermore, the container and the PET bottle have the double bottle structure to provide heat insulation effects, thereby permitting warm or cold beverage to be drinkable for a long time.
The container may be used universally for most of PET beverage bottles on the market, and the container can be coupled to a variety of PET bottles in a simple manner.

DESCRIPTION OF DRAWINGS

FIG. 1 is a sectional view showing a container for covering a PET bottle according to one embodiment of the present invention.

FIG. 2 is a sectional view showing a container for covering a PET bottle according to another embodiment of the present invention.

FIG. 3 is a configuration view of a contact plate.

FIG. 4 is a configuration view of a container for covering a PET bottle according to another embodiment of the present invention.

EMBODIMENTS OF INVENTION

A container for covering a PET bottle according to the present invention includes a cap 1 adapted to cover the upper portion of the PET bottle and a body 2 adapted to be coupled with the cap 1 so as to cover the remaining portion of the PET bottle. Depending on the method of coupling the container with the PET bottle disposed inside the container, there are the following two exemplary embodiments.

First Embodiment

According to the first embodiment of the present invention, as shown in FIGS. 1 and 2, the container for covering a PET bottle P has the cap 1 adapted to cover the upper portion of the PET bottle P, the body 2 adapted to be coupled with the lower portion of the cap 1 so as to cover the lower portion of the PET bottle P, and a contact plate 3 disposed on the bottom surface of the body 2. The container is typically made of PET, like the PET bottle P, but it can also be made of all kinds of synthetic resins or metals.

As shown in FIG. 1, the cap 1 of the container has a coupling portion 11 which forms a hole at the top end thereof, and the hole of the coupling portion 11 has a size that permits passage of a mouth M of the PET bottle P while preventing passage of a flange F therethrough. Accordingly, if the PET bottle P is coupled to the container, the top periphery of the flange F is brought into contact with the underside of the hole of the coupling portion 11.

Instead of the coupling portion 11 of the cap 1 tightly contacted with the top periphery of the flange F of the PET bottle P, as shown in FIG. 2, a coupling portion 11-1 may be provided to be brought into close contact with a shoulder S of the PET bottle P. In this embodiment, the hole of the coupling portion 11-1 has a size that permits passage of the flange F of the PET bottle P therethrough.

The cap 1 is made to have a size capable of maintaining a predetermined distance from the PET bottle P so as not to contact the PET bottle P. The cap 1 has a stopper 12 adapted to block the hole of the coupling portion 11, 11-1. If the stopper 12 is provided like this, the container of the preset invention can be utilized as a water bottle. The stopper 12 is provided with a separate string or a connection band for the purpose of preventing it from being lost.

The body 2 is coupled to the lower end of the cap 1, which is made to a shape of a cup.

To couple the body 2 and the cap 1 to each other, a female thread is formed along the lower periphery of the cap 1 and a male thread is formed along the upper periphery of the body 2, such that the cap 1 and the body 2 are screw-coupled to each other. However, the male thread may be formed along the cap 1 and the female thread along the body 2 for the screw-coupling between the cap 1 and the body 2. Alternatively, the cap 1 and the body 2 may be coupled to each other by tightly inserting to one another, or the cap 1 and the body 2 may form respective concave and convex portions that may engage each other to couple the cap 1 and body 2. As such, the cap 1 and the body 2 of the container may be coupled to each other through a variety of methods.

The contact plate 3 has a flat, or dish-shaped support plate 31 and an elastic member 32 disposed on the underside of the support plate 31 and having predetermined elasticity.

The support plate 31 desirably has a shape of a dish whose periphery is protruded upwardly, thereby making it possible to stably contact the underside of the PET bottle P and has an elastic member receiving portion 311 formed on the underside thereof to receive the elastic member 32 thereon. The support plate 31 may have a hole formed at the center thereof so as to reduce its weight and material.

The elastic member 32 is made of an elastic body having a predetermined elasticity, such as a metal coil spring, a metal plate spring, a foamed rubber plate and so on, so that when the PET bottle P is coupled to the container, the elastic member 32 pushes up the support plate 31 upwardly to permit the top periphery of the PET bottle P to be brought into close contact with the coupling portion 11 or 11-1 of the cap 1. In particular, if the elastic member 32 is formed of the metal plate spring, the spring is fixed to the underside of the support plate 31, as shown in FIG. 3, it becomes convenient to use because the support plate 31 and the elastic member 32 can be provided as an integral body with respect to each other.

Further, the body 2 has an elastic member receiving groove 211 formed on the bottom thereof so as to receive the elastic member 32 thereon.

The container for covering the PET bottle according to the first embodiment of the present invention can be used as follows.

The contact plate 3 is first mounted on the bottom of the body 2, and then the underside of the PET bottle P is placed on the contact plate 3. After that, the cap 1 is placed over the PET bottle P and is coupled to the body 2. As the cap 1 and the body 2 are coupled to each other in this manner, the elastic member 32 of the contact plate 3 becomes compressed to push the support plate 31 upwardly, and the top periphery of the PET bottle P is brought into close contact with the coupling portion 11 or 11-1 of the cap 1, thereby allowing the PET bottle P to be fixed to the container.

Second Embodiment

According to the second embodiment of the present invention, as shown in FIG. 4, the container for covering the PET bottle has the cap 1 adapted to cover the upper portion of the PET bottle P and the body 2 adapted to be coupled with the lower portion of the cap 1 so as to cover the lower portion of the PET bottle P. The cap 1 of the container has a coupling portion 11-2 formed along the top periphery thereof so as to be fastened to the flange F formed along the outer periphery of the mouth M of the PET bottle P.

The cap 1 is installed from the upper side of the PET bottle P toward the lower side thereof, and the coupling portion 11-2 is formed to pass the mouth M of the PET bottle P
and to lock with the flange F. The cap 1 is made to have a size that keeps a predetermined distance from the upper portion of the PET bottle P.

[0035] The coupling portion 11-2 of the cap 1 has a plurality of locking plates 11-21 adapted to be brought into contact with the underside of the flange F of the PET bottle P and a plurality of stopping plates 11-22 adapted to be brought into contact with the top of the flange F of the PET bottle P. Since the locking plate 12-21 can be elastically deformed, when the cap 1 is pressure-fitted from the upper side of the PET bottle P to the lower side thereof, the flange F can pass through the locking plates 11-21. The flange F that has passed through the locking plates 11-21 is then stopped by, and fixedly locked to, the stopping plates 11-22.

[0036] FIG. 4 is a sectional view showing the coupling portion 11-2 of the cap 1 of the container, wherein the plurality of locking plates 11-21 are formed in such a manner as to be coupled to the flange F of the PET bottle P. The locking plates 11-21 are elastically deformed, and thus, when the cap 1 is pressure-fitted from the upper side of the PET bottle P to the lower side thereof, the locking plates 11-21 are pressed by the flange F to deform and allow the flange F to pass through. After the flange F has been passed, the locking plates 11-21 are returned to their original shape and are brought into close contact with the underside of the flange F, thereby allowing the PET bottle P to be firmly coupled to the cap 1. Instead of having a plate shape, the locking plates 11-21 may have a protrusion-like shape.

[0037] The locking plates 11-21 may have a shape of a spiral panel, which is made by cutting a panel having a given width on which a spiral is formed to a predetermined length in a spiral direction. Thus, the spiral panel-shaped locking plates 11-21 cut into a short length can be elastically bent, such that when the PET bottle P is coupled to the cap 1, the entering portion of the spiral is bent and fitted to the flange F of the PET bottle P. Next, when the PET bottle P is turned, the flange F is advanced along the faces of the spiral panels and is coupled to the cap 1. At this time, the spiral panels 11-21 may be arranged in a multiple spiral form.

[0038] The body 2 of the container has an opening formed on the top end thereof, through which the body 2 is coupled from the lower side of the PET bottle P to the upper side thereof, and has a bottom having a size separated from the underside of the PET bottle P by a predetermined distance. The coupling method between the cap 1 and the body 2 is the same as in the first embodiment.

[0039] The container for covering the PET bottle according to the second embodiment can be used as follows.

[0040] If the cap 1 is placed over the PET bottle P and is forcedly pressed, the locking plates 11-21 are deformed by the pressure exerted by the flange F to allow the flange F to pass therethrough. After the flange F has passed, the locking plates 11-21 are returned to their original shape and are brought into close contact with the underside of the flange F, thereby permitting the cap 1 to be coupled to the PET bottle P. Next, the body 2 is covered from the lower side of the PET bottle P toward the upper side thereof and is thus coupled to the cap 1 having the PET bottle P coupled thereto.

[0041] The container for the PET bottle according to the present invention permits the condensed water generated on the surface of the PET bottle P to gather into a gap between the PET bottle P and the external bottle formed by the cap 1 and the body 2, so that while the PET bottle is being carried by a user’s hand or is being in use, a neighboring object or the user’s hand does not get wet because of the condensed water.

[0042] In addition, the container for the PET bottle according to the present invention forms a double bottle structure together with the PET bottle disposed inside thereof, in which an air layer having a predetermined thickness is formed to provide excellent heat insulating effects, so that the cool air or warm air is not easily emitted from the inside of the PET bottle P, thereby enhancing the heat insulation capability.

INDUSTRIAL APPLICABILITY OF THE INVENTION

[0043] The container for covering the PET bottle according to the present invention can be used as an outdoor product in which the beverage in the PET bottle is provided in a cool state while various outdoor activities are carried out in summer season.

1. A container for covering a PET bottle, the container being adapted to be coupled to the PET bottle having a flange formed along a mouth, the container comprising:

a cap adapted to cover the upper portion of the PET bottle and having a coupling portion formed on the top portion thereof, the coupling portion being formed of a given hole having a size capable of passing the mouth of the PET bottle therethrough and not passing the flange therethrough;

a body adapted to be coupled with the lower end periphery of the cap to cover the lower portion of the PET bottle;

and a contact plate adapted to be located inside bottom of the body and having a flat or dish-shaped support plate and an elastic member provided on the underside of the support plate and having a predetermined elasticity, wherein, when the container is coupled to the PET bottle, the container forms a predetermined space between the outer wall of the PET bottle and the inner wall thereof to provide a double bottle structure with the PET bottle.

2. A container for covering a PET bottle, the container being adapted to be coupled to a mouth of the PET bottle, the PET bottle having a flange formed along the mouth, the container comprising:

a cap adapted to cover the upper portion of the PET bottle and having a coupling portion formed on the top portion thereof in such a manner as to be brought into close contact with a shoulder of the PET bottle, the coupling portion being formed of a given hole having a size capable of passing the flange of the PET bottle therethrough;

a body adapted to be coupled with the lower end periphery of the cap to cover the lower portion of the PET bottle;

and a contact plate adapted to be located on the inside bottom of the body and having a flat or plate-shaped support plate and an elastic member provided on the underside of the support plate and having a predetermined elasticity, wherein, when the container is coupled to the PET bottle, the container forms a predetermined space between the outer wall of the PET bottle and the inner wall thereof to provide a double bottle structure with the PET bottle.

3. The container according to claim 1, wherein the elastic member of the contact plate is formed of three or more metal plate springs having a predetermined width, each of the three or more metal plate springs being attached to the underside of
the support plate at one end thereof and being disposed on the inner bottom of the body at the other end thereof.

4. A container for covering a PET bottle, the container being adapted to be coupled to a mouth of the PET bottle, the PET bottle having a flange formed along the mouth, the container comprising:

a cap adapted to cover the upper portion of the PET bottle and having a coupling portion formed on the top portion thereof in such a manner as to be brought into close contact with the underside of the flange of the PET bottle, the coupling portion being formed of a given hole having a size capable of passing the flange of the PET bottle therethrough and having a plurality of locking plates bent elastically and a plurality of stopping plates adapted to be brought into contact with the top surface of the flange; and

a body adapted to be coupled with the lower end periphery of the cap to cover the body of the PET bottle, while

having an air layer having a given thickness formed between the outer wall of the body of the PET bottle and the outer wall thereof, wherein the flange of the PET bottle is fixed to the coupling portion.

5. The container according to claim 4, wherein the locking plates of the coupling portion of the cap are formed of a plurality of spiral panel-shaped locking plates made by cutting a panel having a given width on which a spiral is formed to a predetermined length in a spiral direction.

6. The container according to claim 2, wherein the elastic member of the contact plate is formed of three or more metal plate springs having a predetermined width, each of the three or more metal plate springs being attached to the underside of the support plate at one end thereof and being disposed on the inner bottom of the body at the other end thereof.

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