This invention relates to nestable and stackable containers and more particularly to a plastic container suitable for handling bulk quantities of materials.

Ice cream in bulk is commonly packaged and sold in 2½, 3 and 5 gallon containers known as bulk cans. Specifically, these cans are cardboard with metal rings at top and bottom. Generally, the ice cream packaging process at the dairy includes placing many bulk cans in a line side by side (thereby requiring much space) and passing them under an automatic ice cream dispensing machine. The cans are then capped and stored until shipped to the distributor.

However, because of their design, the cardboard bulk cans cannot be stacked with the bottom of one container fully resting on the top of a like container otherwise they would be easily jostled and overturned. Consequently, they must be stored in pyramid fashion, thereby requiring added space. In the ice cream parlor, the cans are stored on top of each other in the counter freezers. However, when a store clerk attempts to scoop a portion of the hard ice cream from the can, the cardboard bulk cans have a tendency to slip and revolve due to the coating of ice which forms on their smooth top and bottom surfaces. Also, to identify the flavor container therein, one must move the cans and search for the identifying label.

Accordingly, it is an object of this invention to provide a container which avoids the aforementioned difficulties and limitations.

The present invention provides a plastic container for materials in bulk which comprises a side wall, a closed bottom integral therewith and a removable top closure comprising a snap-fitted lid. Both the lid and the bottom of the container have anti-skid external surfaces and the anti-skid surface of the lid is adapted to cooperate with the anti-skid surface of the bottom of a like container thereby allowing the containers to be easily stacked on top of each other so that they are substantially secured.

A further aspect of the present invention includes a container wherein the bottom comprises an annular portion and a flange portion annularly offset from the innermost edge of the annular portion, and extending toward the interior of the container. In addition, the lid of the container comprises a surface configuration, corresponding to the configuration of the bottom and adapted to receive the bottom of a like container in interlocking assembly when the containers are stacked.

A still further aspect of the invention includes a container which is easily nestable within a like container.

In the drawing:

FIG. 1 is an isometric view of a plastic bulk container embodying the invention.

FIG. 2 is an elevational view in section of the container of FIG. 1 stacked on top of a like container only a portion of which is shown.

FIG. 3 is a fragmentary plan view of the bottom of the container of FIG. 1 illustrating the anti-skid surface of the container.

FIG. 4 is an enlarged fragmentary detail of the anti-skid surface of FIG. 3.

FIG. 5 is an elevational view in section of the container of FIG. 1 in a like container.

Referring now to the drawings, as shown in FIG. 1, the container 10 has a side wall 12 and an integral bottom 14. The container 10 is further provided with a removable lid 16. On the external surface of the lid 16 is an annular anti-skid surface 17 which allows like containers to be firmly secured when containers are stacked as shown in FIG. 2.

FIG. 2 shows the container 10 positioned or stacked on a like container. The integral bottom 14 of the container 10 has an annular portion 22 having an anti-skid external surface 20 and a flange portion 24 annularly offset from the innermost edge of the annular portion 22 extending toward the interior of the container 10. The lid 16 of the container 10 is provided with a surface configuration corresponding to that of the bottom 14 wherein 17, 19, and 21 of the lid 16 correspond to 20, 22, and 24 of the bottom 14 respectively. Thus, the lid 16 is adapted to receive the bottom 14 of a like container in interlocking assembly when the containers are stacked.

As further shown in FIG. 2, the side wall 12 slopes slightly outwardly from the integral bottom 14 to the top 15. The side wall 12 is also provided at one end thereof opposite to the bottom 14 and an outwardly projecting peripheral shoulder 28 and a peripheral collar 30 extending vertically from the shoulder 28. The collar 30 terminates in a flange 32 and extends downwardly therefrom. The outer diameter a of the shoulder 28 is greater than the diameter b of the top 15 to support a like container nestable therein (FIG. 5) wherein the shoulder 28 of one container 10 rests on the collar 30 of a like container. Again, the lid 16 is provided with a peripheral configuration wherein 29, 31 and 33 of the lid 16 corresponds to 28, 30, and 32 of the container wall 12. Thus, the lid 16 is received by the container 10 in snap-fitted fashion (FIG. 5) so as to protect the contents contained therein from contamination. However, any variation in lid design which would afford the same protection would be suitable.

As shown in FIG. 3, the anti-skid surface of the lid 16 and of the container bottom 14 comprises a plurality of riffs 26. The configuration of each riff 26 is readily demonstrated in FIG. 4. While it is preferred that the riffs 26 have the design as shown, any modification which would achieve the same unique anti-skid effects may be substituted.

While it is preferred to thermofuse the plastic container of the invention from polyethylene of either the high density or low density type, other thermoplastic resins may be substituted, including polyethylene copolymers, polypropylene, copolymers of ethylene and propylene, and mixtures of such polyolefins, polysyrene and its modifications and other thermoformable plastic materials.

The proposed container may vary in design depending on its intended purpose. For example the base of the container may take any desired configuration, but in the preferred form of the invention, the base of the container has a slightly smaller diameter than the top in order to impart a slight taper to the walls of the container. The tapered walls facilitate the receipt of one container within a like container in nesting or telescoping fashion. Also, the surface configuration of the bottom portion of the container may vary, including the riffsed anti-skid surface, as long as the surface configuration of the lid is similarly adjusted whereby the aforementioned stacking and anti-revolve features are achieved.

The plastic bulk container of the invention permits the use of much lighter weight material without any sacrifice of container strength. Also, because of the container's unique design it can be readily nested within a like container before the filling operation thus requiring minimum storage space. When ready to receive ice cream, the plastic container is easily removed from within a like container because of its substantially frictionless plastic wall. Furthermore, because of the anti-skid surfaces and config-
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1. A nestable container for materials in bulk which container comprises:
   (a) a side wall; a closed bottom integral therewith; a removable snap-fitted lid; both said bottom and said lid having anti-skid external surfaces corresponding to each other; said surface of said lid being adapted to cooperate with the anti-skid surface of the bottom of a like container thereby preventing them from revolving when stacked;
   (b) said bottom of said container comprises an annular portion and a flange portion annularly offset from the innermost edge of said annular portion, and extending toward the interior of said container; and said lid of said container comprises a surface configuration of said bottom and adapted to receive said bottom of a like container in interlocking assembly when said containers are stacked;
   (c) said side wall slopes slightly outwardly from said integral bottom to said lid and is provided at one end thereof opposite to said bottom with an outwardly projecting peripheral shoulder and a peripheral collar extending vertically from said shoulder; the outer diameter of said shoulder being greater than the diameter of said lid to support a like container nestable therein;
   (d) said collar of said side wall terminating in a flange extending outwardly therefrom, said outwardly projecting peripheral shoulder resting on said flange when said containers are nested, and
   (e) said lid having a configuration at its periphery corresponding to the configuration of said shoulder and said collar of said container and adapted to be received therein in snap-fitted fashion.

2. The container of claim 1 wherein said anti-skid of said container bottom and said lid comprise a plurality of ripples.

3. The container of claim 2 wherein said container and said lid comprise thermoplastic polymeric material.

4. A plastic container for materials in bulk adapted to be received in a nestable arrangement within a like container and supported therein which container comprises:
   (a) a side wall; a closed bottom integral therewith, a removable top closure; said side wall sloping slightly outwardly from said integral bottom to said top;
   (b) said side wall being provided at one end thereof opposite to said bottom with an outwardly projecting peripheral shoulder and a peripheral collar extending vertically from said shoulder; the outer diameter of said shoulder being greater than the diameter of said removable top closure to support a like container nestable therein;
   (c) said removable top closure comprising a snap-fitted and extending outwardly therefrom, said outwardly projecting peripheral shoulder resting on said flange when said containers are nested;
   (d) said integral bottom of said container having an annular portion and a flange portion annularly offset from the innermost edge of said annular portion, and extending toward the interior of said container;
   (e) said removable top closure comprising a snap-fitted lid;
   (f) said snap-fitted lid having a configuration at its periphery corresponding to the configuration of said shoulder and said collar of said container and adapted to be received therein in snap-fitted fashion;
   (g) said snap-fitted lid having a surface configuration corresponding to the configuration of said bottom and adapted to receive said bottom of a like container in interlocking assembly when said containers are stacked, and
   (h) said annular portions of said lid and said bottom of said container having a plurality of ripples thereby providing an anti-skid surface such that the containers are prevented from revolving when stacked.

5. The container of claim 4 wherein said container and said lid comprise thermoplastic polymeric material.

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