A beverage cup containing a single serving of a beverage concentrate, the beverage concentrate being itself packaged and sealed within a suitable package formed of conventional inert packaging material such as metallic foil, and thermoplastics and the like, the packaging material being insoluble in water, and being capable of withstanding the temperature of boiling water without breaking down or dissolving. The package is preferably formed with some form of retaining means which grips the cup and holds it securely in the bottom of the cup. The top or lid of the package is removable, and is provided with some suitable form of tab means extending upwardly within the cup and over the lip of the cup whereby a person using the cup will be able to remove the entire top or lid of the package without being obliged to place his fingers within the cup.

3 Claims, 2 Drawing Figures
CUP WITH BEVERAGE CONCENTRATE CONTAINER

The invention relates to a disposable beverage cup containing a single serving of a beverage concentrate or mix.

BACKGROUND OF THE INVENTION

Disposable beverage cups are already in use, in which a single portion of a powdered beverage concentrate is deposited in the bottom of the cup, and a closure or lid is fitted within the cup, forming the bottom portion of the cup into a closed compartment. In this way, the powdered beverage concentrate is retained securely in the bottom of the cup, and when it is desired to serve a cup full of beverage, all that is required is to remove the lid and add hot water.

Beverage cups of this type have usually been manufactured of expanded polystyrene plastic material to provide the heat insulation required to withstand the use of very hot water, without discomfort to the hands. Such expanded plastic material however, is slightly porous, and as a result when the beverage concentrate, deposited in the bottom of the cup, is stored for any length of time, it tends to dry out and lose its flavour and become unappetising. This type of system, in which the beverage concentrate is simply deposited directly in the cup must therefore be manufactured and used within a very short space of time, since otherwise it will have to be thrown away.

An additional disadvantage of this system was the fact that in order to remove the lid or cover from the inside of the cup, it was necessary to insert the fingers into the cup. This has been found by the health authorities to be objectionable, since it leads to the possibility of contamination of the inside of the cup.

In order to overcome these disadvantages, another proposal has been to provide a beverage cup of the same type, in which the beverage concentrate is sealed within a membrane like material. The membrane sealer is soluble in hot water, and all that the user has to do is simply add hot water and stir. The membrane material apparently is intended to seal the beverage concentrate against drying out or deterioration, until it is used. This type of system is therefore superior to the aforementioned system, but presents substantial practical difficulties. In particular, the manufacture of a suitable membrane material which is soluble and may be actually consumed without harmful effects, presents serious problems. In addition, it requires the use of special packaging machinery requiring very substantial investment, and as a result such a system has not become widely adopted.

BRIEF SUMMARY OF THE INVENTION

The invention, therefore, seeks to overcome the foregoing disadvantages, by the provision of a beverage cup of the class described, containing a single serving of a beverage concentrate, the beverage concentrate being itself packaged and sealed within a suitable package formed of conventional inert packaging material such as metallic foil, and thermostatics and the like, the packaging material being insoluble in water, and being capable of withstanding the temperature of boiling water without breaking down or dissolving. The package is preferably formed with some of retaining means which grips the cup and holds it securely in the bottom of the cup. The top or lid of the package is removable, and is provided with some suitable form of tab means extending upwardly within the cup and over the lip of the cup whereby a person using the cup will be able to remove the entire top or lid of the package without being obliged to place his fingers within the cup. More particularly, it is an objective of the invention to provide a single serving beverage cup having the foregoing advantages in which the package is formed with a flange extending outwardly therefrom, and in which the cup is formed with an annular recess in the side wall thereof at a predetermined distance above the bottom of the cup, the recess receiving the flange and retaining the package in position.

More particularly, it is an objective of the invention to provide a single serving beverage cup having the foregoing advantages in which the retained portion of the package is integrally bonded to the interior of the cup during the moulding procedure.

More particularly, it is an objective of the invention to provide a single serving beverage cup having the foregoing advantages in which the package is provided with a top having a tearable weakness or indentation formed therein, such weakness being formed in a spiral manner, whereby to permit removal of the top cleanly and completely without leaving any portion of the top or lid adhering to the retained portion of the package.

The foregoing and other advantages of the invention will become apparent from the following description of a preferred embodiment of the invention which is given here by way of example only with reference to the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective illustration, partly cut away showing a beverage cup containing a package for a single serving of a beverage, and,
FIG. 2 is an enlarged sectional elevation.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1 and 2, a preferred embodiment of the invention is shown comprising a cup 10 preferably formed of expanded polystyrene plastic material, and having a lip 11 and a bottom 12. Towards the bottom of the cup 10, the side wall of the cup is indented or recessed as at 13, so as to define an annular lip or shoulder 14 extending therearound a predetermined distance from the cup bottom.

Within the recess 13, a package indicated generally as 15 is inserted, and is retained by the lip 14 against removal.

The package 15 comprises a pan-like member 16 having side wall 17, and a continuous peripheral lip 18. A lid or closure panel 19 is adhesively bonded around the flange 18, and hermetically seals the interior so as to secure the powdered beverage concentrate 20 therein. The lid or closure panel 19 is preferably formed as shown in FIG. 1 in a spiral fashion, that is to say it is provided with a spiral weakness or tear line 21, accordingly to known practice, whereby to facilitate the removal thereof in one piece.

A tab portion 22, either bonded to or integrally formed with the lid or closure panel 19 extends up one side of the interior of the cup, and an end portion 23 is folded over the exterior of the cup, where the same may be readily grasped between the finger and the
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In this way, a person wishing to consume the beverage will simply grasp the tab 22 by its end portion 23 and pull upwardly thereby tearing the lid or closure panel 19 along its line of weakness 21. In this way, the entire closure panel 19 is removed from the interior of the cup exposing the concentrate beverage 20. Hot water is then added to the cup, and the beverage consumed.

The pan-like member 16 remains trapped within the cup, and being held by the shoulder or ridge 14, cannot in fact be removed from the cup without some difficulty.

Accordingly, it is essential for the purposes of the invention that the pan-like member 16 should be formed of a material which inert for the purposes of use, namely, it will be inert to the beverage concentrate and to the hot water, so that it will not in any way affect the beverage at the time it is being either stored or mixed or consumed. Materials which are inert for this purpose are of course well known in the art. They comprise such materials as metallic foils which are already in use in the manufacture of single serving containers or packages of this type. Such foil packaging members are used in the serving of single servings of cream, jam, butter and the like and are also used in other instances in the packaging of various beverage concentrates, particularly soups and the like. Materials such as metallic foils are acceptable to health authorities, and pose no health hazard when entrapped within the cup 10 in this manner. Other suitable materials are certain selected thermoplastics and other plastics which may be vacuum formed or injection moulded, or formed according to any other suitable techniques into the necessary shape.

It will of course be appreciated that not all such thermoplastics will be inert having in mind the temperatures encountered in conventional usage which may well exceed 200°F. However, the properties of all such thermoplastics are well known and are readily available in standard reference works, and those selected thermoplastics which will withstand such temperatures and usage without in any way contaminating the beverage, are well known to manufacturers and health authorities alike and require no further description.

In addition, it will of course be understood that the foil or other material forming the pan member 16 should be sufficiently stiff that it can withstand the stresses imposed by the removal of the lid 19 without becoming loosened from its position within the cup 10. Conversely, the lid or closure panel 19 should preferably be sufficiently thin that it can readily be removed without imposing excessive stresses on the pan member 16 and its entrapment in the cup 10. Various materials will be suitable for the panel or lid 19 such as thin foil, sheet thermoplastic material, and in some cases coated papers and the like, all of which are conventionally in use in the art for such purposes.

The manufacture of the cups 10 may be carried out by conventional techniques such as blow moulding and the like, in the case of expanded polystyrene material, or any other suitable moulding technique which may be applicable in any particular circumstances. The pan 16 is filled with the beverage concentrate 20 and seeded with the lid or closure 19 according to well known conventional packaging techniques and again requires no description. By any suitable machinery (not shown) the complete package 15 is then inserted into the cup 10 and pressed downwardly, until the flange 18 is pressed down beyond the annular rib 14, at which time the rib 14, being somewhat resilient, will snap back over the flange 18 as shown and trap the entire package in position.

The foregoing is a description of a preferred embodiment of the invention, and is given here by way of example only. The invention is not to be taken as limited to any of these specific features as described, but comprehends all such variations thereof as come within the scope of the appended claims.

What we claim is:

1. A beverage cup for dispensing a single portion of a beverage, from a beverage concentrate contained within the cup, said cup comprising:

a drinking receptacle, of sufficient size to contain a single serving of a liquid beverage, said receptacle having a bottom and side walls, said side walls defining a rim, said side walls of said receptacle defining an upper and a lower portion, said upper portion being of a predetermined thickness and said lower portion being of a reduced thickness with respect thereto, whereby to define an inner annular shoulder running around the interior of said receptacle adjacent to but spaced above said bottom wall thereof, at the junction between the lower and upper wall portions the outer surface of said receptacle side walls being smooth and regular;

a container for said beverage concentrate secured in the bottom of said receptacle, said container containing a single serving of a beverage concentrate, and being formed with a bottom, side walls, and an open top accessible to the interior of said receptacle;

a peripheral lip running around the open top of said container and dimensioned to fit within said lower side wall portion of said receptacle and be retained therewith by interengagement with said annular shoulder, said container being formed of a material which is harmless when immersed in said liquid beverage, and being secured as aforesaid in said bottom of said receptacle to prevent removal thereof upon opening thereof;

closure panel means extending over the open top of said container, and sealably fastened therearound, and,

tab means connected to said closure panel, whereby said closure panel may be removed from said container while said container remains secured in the bottom of said receptacle thereby exposing said beverage concentrate within said container at the bottom of said receptacle, the receptacle then being ready for the addition of liquid without removal of said container.

2. A beverage cup as claimed in claim 1 wherein said closure panel is formed with a spiral tear line therein, said tab means being connected to said closure panel so as to permit tearing of said closure panel along said spiral line of weakness.

3. A beverage cup as claimed in claim 1 including an end portion on said tab means folded over the rim of said receptacle, whereby the same may be grasped without contaminating the interior of said receptacle.