United States
Environmental Protection
Agency
Washington DC 20460

February
1985

EPA

Child-Resistant Packages for Pesticides

The author wishes to thank Ms Ferial Bishop, Ms. Sara Black, Mr. Stephen Delaney, Mr. Robert Flanagan, Ms. Jane Ulrich, and others who were invaluable in the preparation of this document.

For sale by the Superintendent of Documents, U S Government Printing Office
Washington, D C 20402

Child-Resistant Packages for Pesticides

By
Rosalind L. Gross, Ph. D.

Edited By
Art Donner
Charles J. Wilbur*

Photography by
Allen L. Wilson

February 1985

Published By
Registration Division
Office of Pesticide Programs
U.S. Environmental Protection Agency

* Under an Interagency memorandum of understanding, the U.S. Consumer Product Safety Commission provided consultations on the technical aspects of this publication.

Preface

"Child-Resistant Packages for Pesticides"

The purpose of this publication is to provide a quick guide to child-resistant packages for use by Agency "personnel" wanting to know if a package is intended by the manufacturer to be a child-resistant design, and/or who manufactures the package.

This publication is a cumulative compilation of the various child-resistant packages which are/may be used for pesticides. An earlier publication entitled *Identification of Selected Child-Resistant Closures (Continuous Thread, Lug-Bayonet, and Snap Closures)* by Rosalind L. Gross and Harry E. White August 1978 was written while in their official capacity with the Consumer Product Safety Commission.

Packages are designated as child-resistant on the basis of the manufacturers' claims. The Environmental Protection Agency (EPA) does not usually review the manufacturers' test data on child-resistant packages. The exception to this policy is an enforcement action involving a pesticide as packaged. In an enforcement action the Agency may exercise its right under the child-resistant packaging regulations to review the manufacturer's test data. The appearance, however, of a package in this publication is *not* intended in any manner to denote endorsement or approval of the package by the Agency. This publication is not a comprehensive listing of all child-resistant packages. The child-resistant packages (CRP) discussed in this publication are not the only ones which may be used for pesticides nor are these packages only for use on pesticides. Rather the inclusion or exclusion of a package as CRP for pesticides in this publication is based on information provided to the Agency by the manufacturer. Any CRP manufacturer advising the Agency of an addition to this publication will be advised that their package will be held for future updates of the publication

U.S. Environmental Protection Agency

Introduction

The Poison Prevention Packaging Act, PPPA, which provides for child-resistant packaging (CRP) of toxic products other than pesticides was enacted to protect children under five years of age from serious illness or injury resulting from ingestion of or contact with hazardous substances. Child-resistant packaging requirements were adopted in lieu of or in addition to various label options such as "Keep Out of Reach of Children" that failed to provide adequate protection to children. The PPPA previously regulated the packaging of pesticides but was amended in 1976 to exclude them and the responsibility now rests with EPA.

The regulation for the child-resistant packaging of pesticides, 40 CFR 162.16, implements Section 25 (c)(3) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, which authorizes standards for the packaging of pesticides or devices to protect children and adults from serious illness or injury resulting from accidental ingestion or contact with these pesticides or devices. FIFRA requires that, to the extent possible these standards shall be consistent with those under the PPPA, which is currently administered by the Consumer Product Safety Commission (CPSC).

The purpose of this publication is to provide a quick guide to child-resistant packages (CRP) for use by Agency personnel wanting to know if a package is a child-resistant design, and/or who manufactures it. This publication uses the American Society of Testing Materials (ASTM) standard classification for CRP. The ASTM is a voluntary standards organization. The purpose of the ASTM standard classification of CRP, D3475-83, is to establish a uniform set of terminology for the various types of CRP in order to promote a universal description for any CRP-type package

Listing Of ASTM Classes Involved In The Book

A. ASTM type I - packages with continuous threaded closures

Subclasses: No subset
No subset localized push down then turn
No subset pull tab open then turn closure
I A - random push
I B - local squeeze
I E - key or device
I F - random lift
I G - local lift
I H - local push

B. ASTM type II - packages with lug-bayonet closures

Subclasses: II A - random push

C. ASTM type III - packages with snap closures

Subclasses: No subset rotate O-ring to expose tab & then lift tab
No subset lift tab & then push up cap
No subset snap on twist off
III A - align two points
III A - slide then lift up (align 2 points)
III D (1) - press to release then lift
III D (3) - push up
III G - requires key, device, or fingernail

D. ASTM type VII - aerosol packages

Subclasses: No subset localized push to release, followed by localized pull to release & lift off cap (actuates normally)
VII A - local squeeze
VII D - requires key or device

E. ASTM type VIII - nonreclosable packaging semirigid (blister)

Subclasses: VIII D - peel back & push out

F. ASTM type IX - mechanical dispensers

Subclasses: IX B (1) - trigger pump press down, rotate, & squeeze

Contents by ASTM Type

Contents Alphabetical by CRP Manufacturer

MANUFACTURER	MODEL	ASTM
Hedwin Corporation	**Hedgard FS - 70**	**I** (no subset)

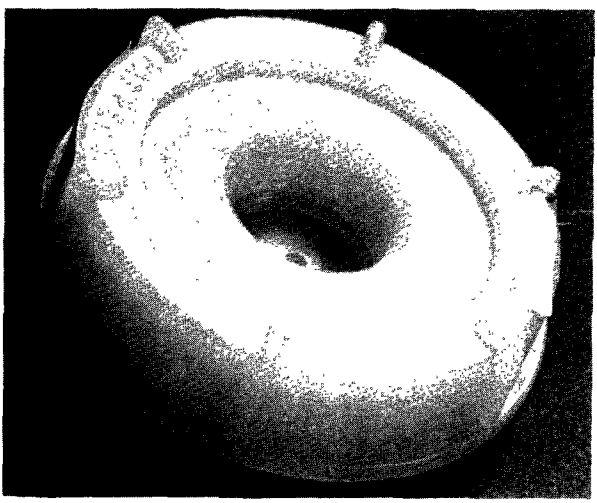
DESCRIPTION

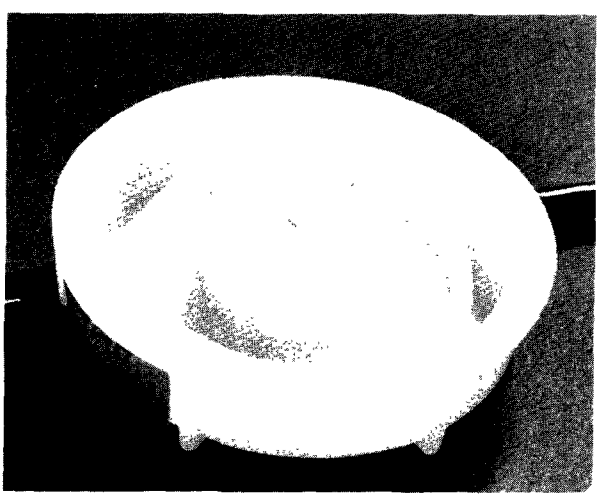
The 70mm closure is a one piece plastic continuous threaded closure which is opened by turning counter-clockwise. The closure is vented (see center of cap, and upside down view of cap in photograph) by means of a small hole and covered with a resistant material. The closure has an o-ring inside it which makes it difficult to remove. This type of closure is used on packages such as tighthead pails for products like liquid pool chemicals.

The instructions are:

↙ Open,

↖ Close Tight





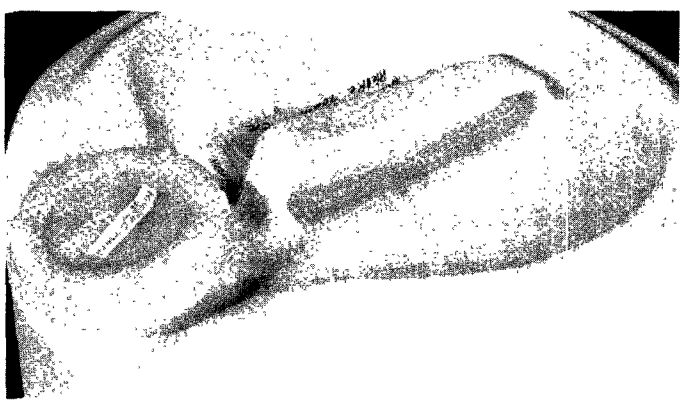
	MODEL	ASTM
Rieke Corporation	**1. Rieke FS-80 Closure with a Bennett Industries Tighthead Pail** **2. Rieke FS-70 closure with ¾" NPT**	I (no subset)

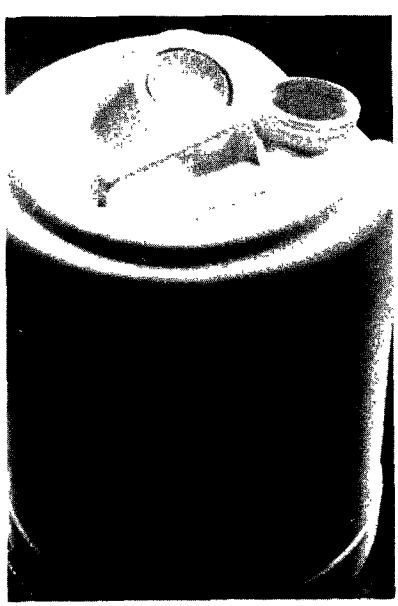
DESCRIPTION

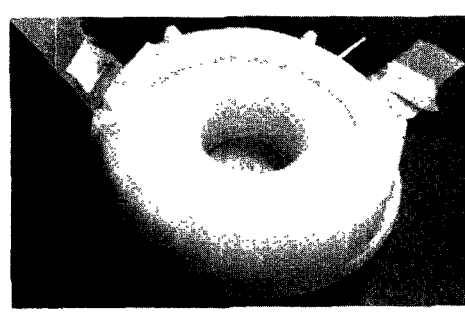
The 70 mm one piece plastic continuous threaded closure is opened by turning counterclockwise. The closure, which is not vented, has an o-ring inside it (see arrow in photograph) making it difficult to remove. The FS-70 only differs from the FS-80 in that it has a ¾" National Pipe Thread, NPT, for dispensing purposes (see photograph). The closure may be used on a package i.e. a tighthead pail with a neck finish in accordance with Rieke's specifications. One such tighthead pail is the Bennett Industries tighthead 5 gallon pail (see photograph). This package (closure and tighthead pail) is used for products such as liquid pool chemicals.

On both models the instructions are:

↙—Open, ↖—Close tight





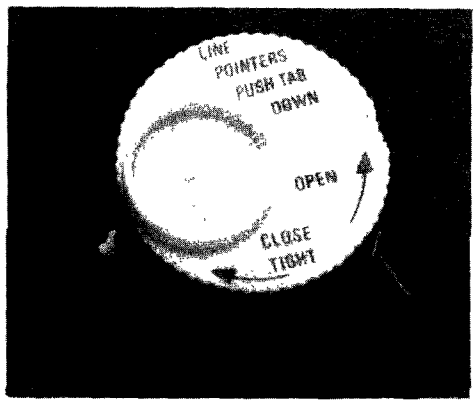


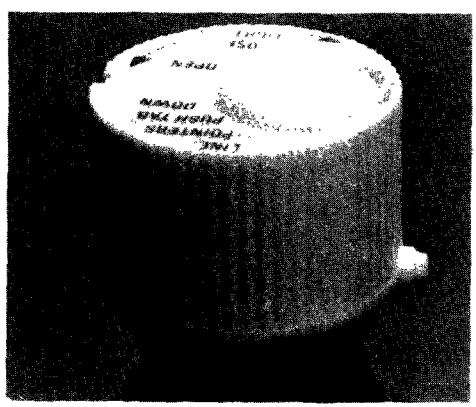
MANUFACTURER	MODEL	ASTM
M & M Plastics, Inc. (Part of Brockway)	**Morris Cap**	I (no subset) **Align, localized push down then turn**

DESCRIPTION

This is a two piece plastic/plastic continuously threaded closure. The package is opened by aligning the tabs on the bottom of the two closure pieces (inner and outer), pushing down on the tab on top of the closure and then turning the closure counterclockwise. Note the tab on top of the closure does not have to be held down while turning it. The closure height of the inner threaded portion is less than for ASTM type IA CRP for other liquid packages.

The instructions are:
Line, Pointers, Push tab Down, Tab, Open, Close, Tight
or
Line, Points, Tab, Push, Tab, Turn, Close tight





MANUFACTURER	MODEL	ASTM
Internova Corporation	**Gate Lok** **Lefty Lok**	**I** (no subset) **Pull tab open then turn closure**

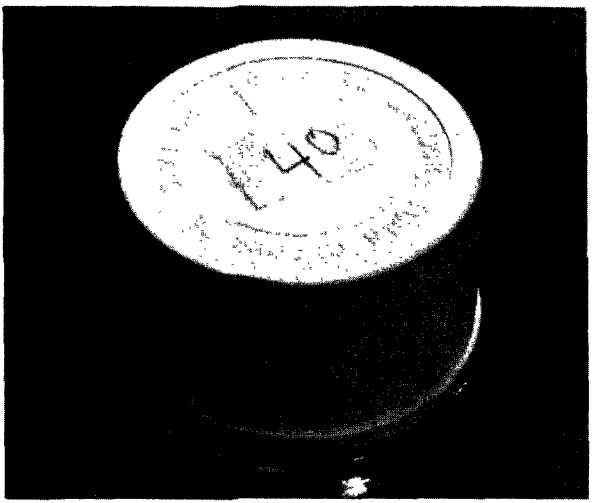
DESCRIPTION

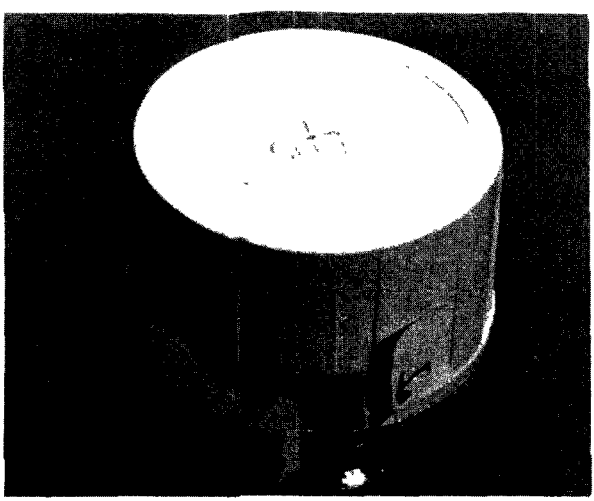
This is a one piece plastic continuously threaded closure. The Gate Lok is opened by pulling the tab (gate) to the right and then turning the closure counterclockwise.

The Lefty Lok is opened by pulling the tab (gate) to the left and then turning the closure clockwise. The tab is located on the bottom of the closure and permanently attached by a hinge in both models (photograph is lefty lok). Note both versions can have a tamper-evident feature.

The Gate Lok directions are:
Snap gate ↑ open,
To unlock-turn ↶

The Lefty Lok directions are:
Snap gate ↑ open,
To unlock-turn clockwise ↷



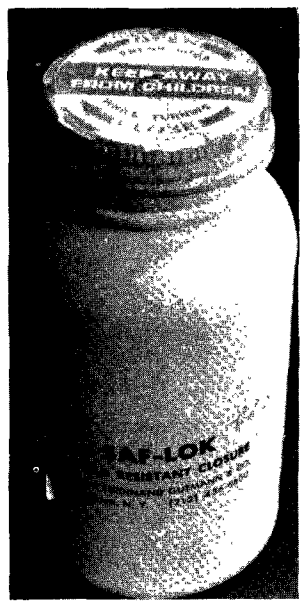


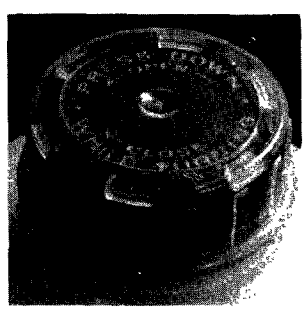
MANUFACTURER	MODEL	ASTM
Ferdinand Gutmann & Company	**Saf Lok**	**I A**

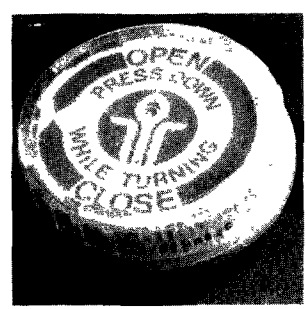
DESCRIPTION

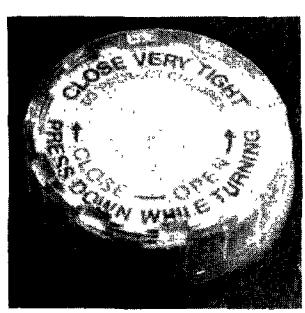
This is a two piece clear plastic/metal continuously threaded closure. The closure is opened by pushing down while simultaneously turning it counterclockwise. The metal undercap has notches which correspond to ridges in the overcap and lock the two caps together when pushing down. There are various sets of instructions for this closure.

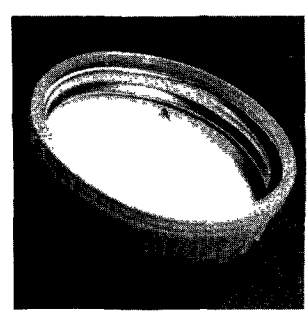
The instructions are:
Press down, ↙Open↘ ↖Close↗ While turning
or
Close very tight, To protect children,
↖Close — open↗
Press down while turning
or
↙Open↘ Press down,
Keep away, From children,
While turning, ↖Close↗
or
↙Open, Press down,
While turning, ↖Close
or
Press down, ↙Open↘
Boehringer, Ingelheim,
↖Close tightly↗
While turning











MANUFACTURER	MODEL	ASTM
ITL Industries, Inc.	**Med-A-Safe**	**I A**

DESCRIPTION

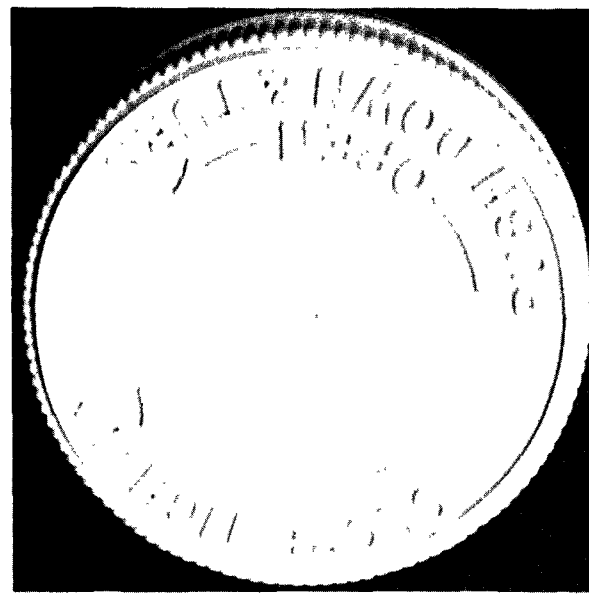
This is a two piece plastic/plastic continuously threaded closure. The closure is opened by pushing down and simultaneously turning it counterclockwise.

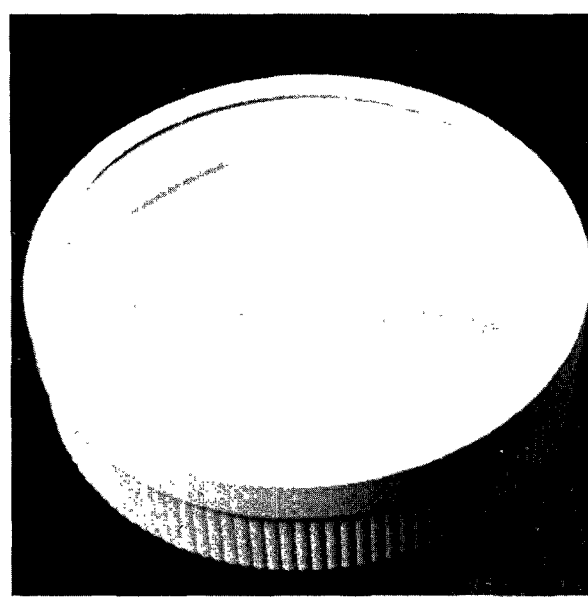
The instructions are:

Close tightly →

← Open

Push down & turn



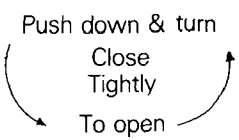


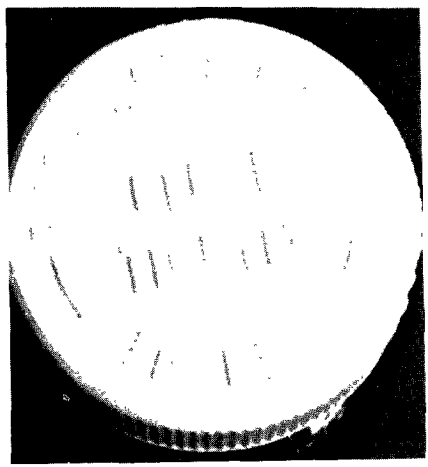
MANUFACTURER	MODEL	ASTM
Kerr Glass Manufacturing Corporation	**CR - I**	**I A**

DESCRIPTION

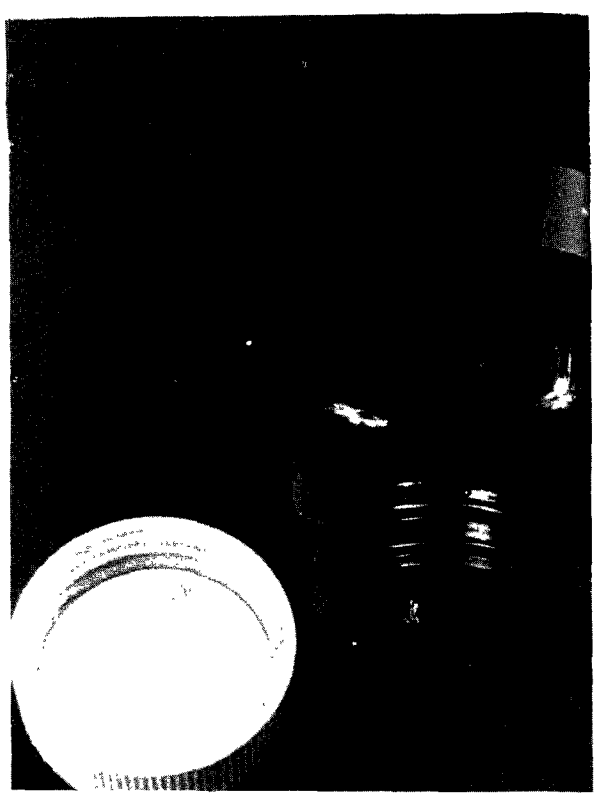
This is a two piece plastic/plastic continuously threaded closure The closure is opened by pushing down on the closure and simultaneously turning it counterclockwise. The sides of the closure have uniform piping with 3 areas of nonuniform wider piping.

The instructions are·





Note the Mack-Wayne Closures Division of the West Company manufactures this closure too under a license agreement.



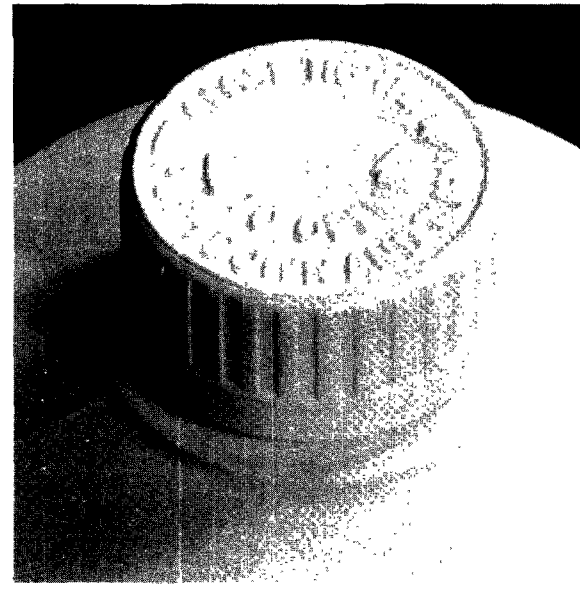
MANUFACTURER	MODEL	ASTM
Owens-Illinois	**Argus Loc**	**I A**

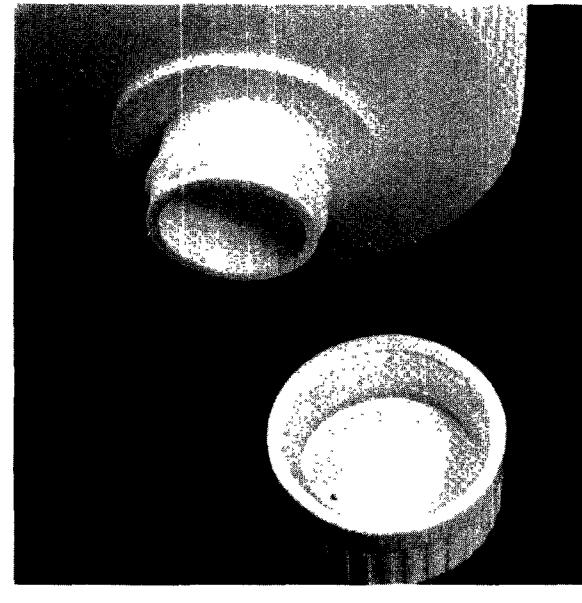
DESCRIPTION

This is a two piece plastic/plastic continuously threaded closure. The package is opened by pushing down and simultaneously turning the closure counterclockwise. The outside of the closure on the side has medium spaced piping going about two-thirds of the way down the side of the cap for the entire circumference

The instructions are:

↙Close tightly↘
↖To open↗
Push down and turn





MANUFACTURER	MODEL	ASTM
Owens-Illinois	**Clic Loc**	**I A**

DESCRIPTION

This is a two piece plastic/plastic continuously threaded closure. The closure is opened by pushing down and simultaneously turning it counterclockwise. The side of the closure has small piping down the side (90%) for the entire circumference.

The instructions are:

Close tightly

While pushing down turn

MANUFACTURER	MODEL	ASTM
Poly-Seal Corporation	**Queen Anne Poly-Seal Closure**	**I A**

DESCRIPTION

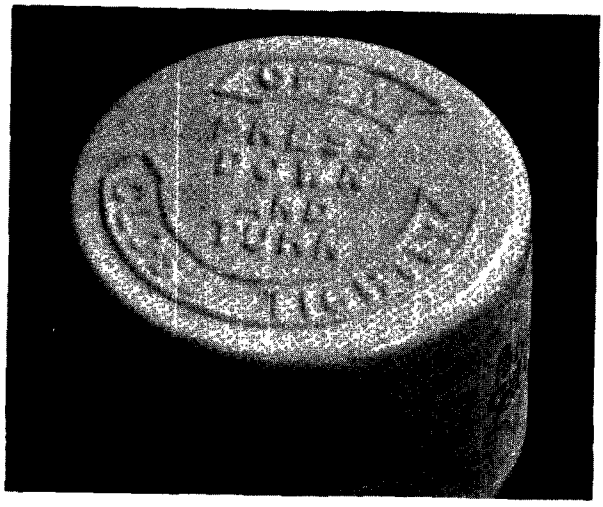
The closure is a two piece plastic/plastic continuously threaded closure, which is opened by pushing down and simultaneously turning it counterclockwise. There is a clear plastic conical shaped liner in the cap.

The instructions are:

←Open—

Press, Down, And, Turn,

↖Close tightly ↙



MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Push Lok**	**I A**

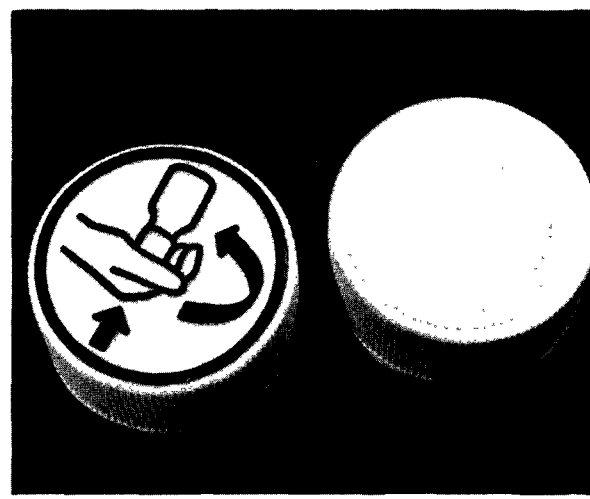
DESCRIPTION

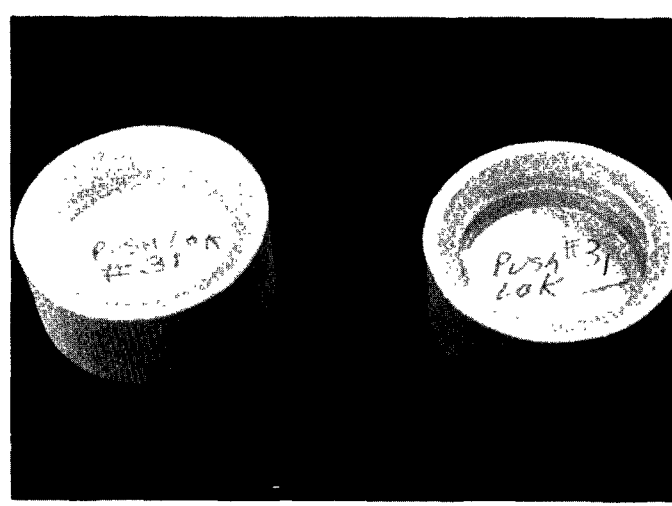
This is a two piece plastic/plastic continuously threaded closure. The package is opened by pushing down on the closure and simultaneously turning it counterclockwise.

There are two sets of instructions which are:
(A) Is an illustration (see photograph)

(B) Close tightly

While pushing down turn





MANUFACTURER	MODEL	ASTM
Van Blarcom Closures, Inc.	**Saf-Cap** [Metal/Metal Can Closure size in inches]	**I A**

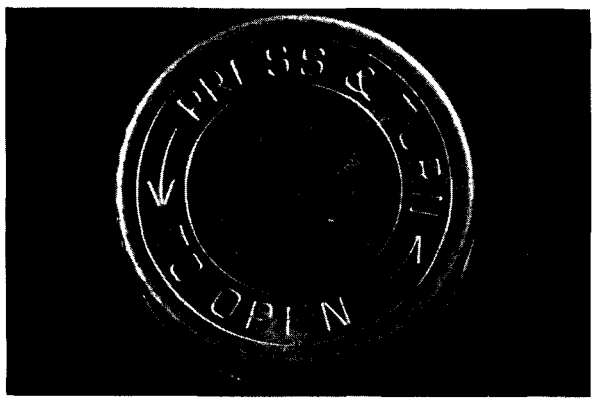
DESCRIPTION

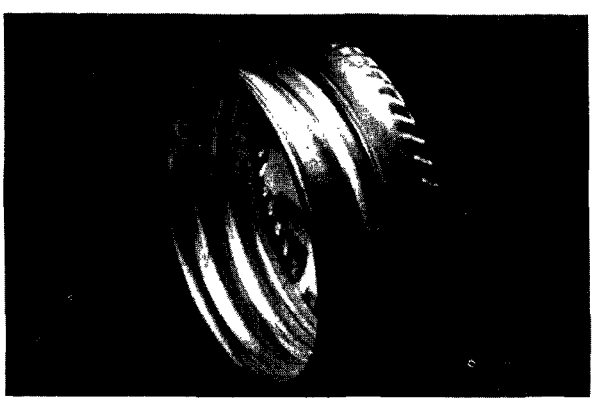
This is a two piece metal/metal continuously threaded closure for use on can nozzles (neck). The closure is opened by pushing down and simultaneously turning it counterclockwise. The top piece of the closure is a metal crown and the inner closure piece is a standard continuously threaded can closure. The inner closure has diagonal ribs around the upper edge which match ribs inside the crown.

The instructions on the crown are:

↙Press & turn,

To open ↗





MANUFACTURER	MODEL	ASTM
Van Blarcom Closures, Inc.	**Saf-Cap** [Plastic/Metal Can Closure size in inches]	**I A**

DESCRIPTION

This is a two piece plastic/metal continuously threaded closure for use on can nozzles (necks). The closure is opened by pushing down and simultaneously turning it counterclockwise. There is evenly spaced vertical ribbing around the vertical part of the outer cap except at the bottom which is slightly flared. The inner cap is a standard continuously threaded closure with diagonal ribs around the entire upper edge (these match ribs inside the overcap) See the Saf-Cap II for the photograph of this closure.

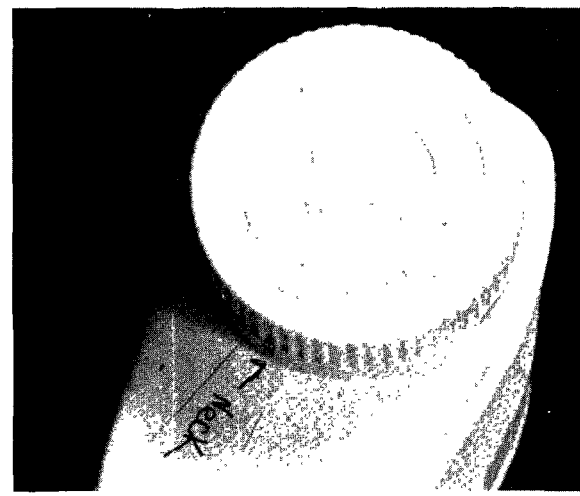
The instructions are:
Push down & turn,
Close, Tightly,
To open

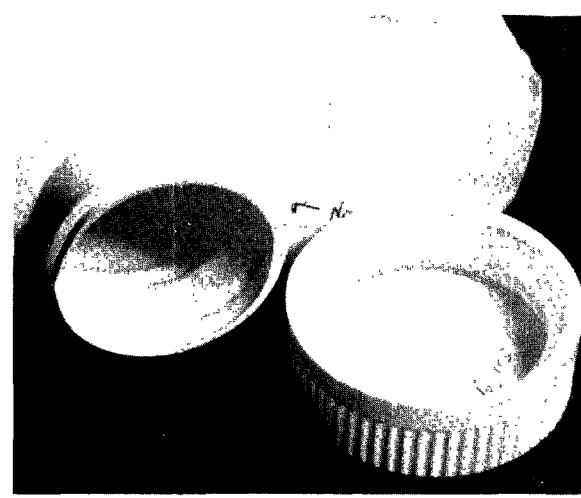
MANUFACTURER	MODEL	ASTM
Van Blarcom Closures, Inc.	**Saf-Cap I** [Plastic/Plastic]	**I A**

DESCRIPTION

This is a two piece plastic/plastic continuously threaded closure which is opened by simultaneously pushing down on the closure and turning it counterclockwise. The vertical part of the outer cap has evenly spaced vertical ribs except at the bottom. The inner cap has diagonal ribs around the upper edge which match ribs inside the overcap.

The instructions are: ↙Push down & turn, Close, Tightly, To open ↗



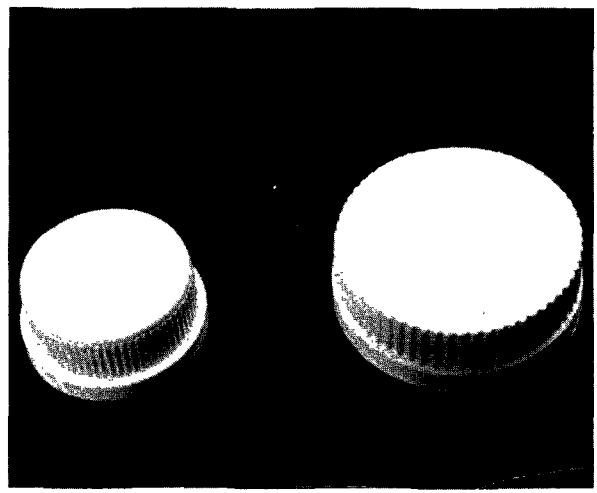


MANUFACTURER	MODEL	ASTM
Van Blarcom Closures, Inc.	**Saf-Cap II** [Plastic/Metal]	**I A**

DESCRIPTION

This is a two piece plastic/metal continuously threaded closure which is opened by pushing down and simultaneously turning the closure counter-clockwise. There is evenly spaced vertical ribbing around the vertical part of the overcap except at the bottom, which is slightly flared. There is diagonal ribbing around the upper edge of the inner closure which matches ribbing inside the overcap.

The instructions are:
↙Push down & turn,
Close, Tightly, To open↗



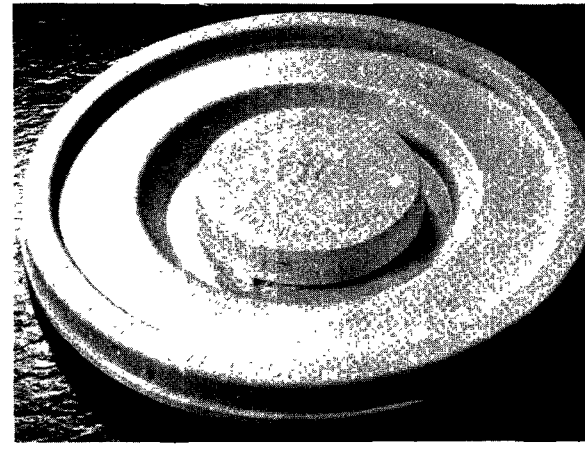
MANUFACTURER	MODEL	ASTM
Bennett Industries and Sunbeam Plastics Corporation	**Open Head Pail/Squeeze Lok Closure**	**I B**

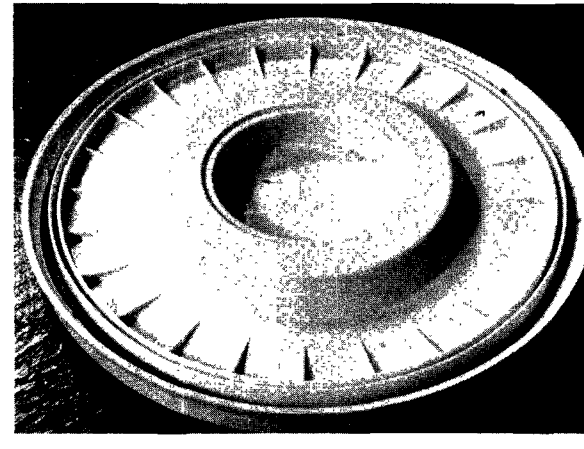
Description

The package consists of a plastic open head pail with a plastic lid and a plastic one piece continuously threaded closure on the lid. The package is opened by squeezing on the indicated point (dot) on the closure while turning it counter-clockwise. At a 90° angle to the squeeze point the closure has a one lug extension. This lug extension fits into a bayonet extension on the threaded neck portion of the pail lid preventing opening unless the closure is squeezed (marked by arrows in the photograph).

The pail lid on the inside has a groove with an o-ring for the pail opening to fit into (see photograph). There is also some ribbing and a second groove inside the lid. On the side of the lid there are some slots to fit the lid and pail together to meet DOT standards. If the slots are cut the pail lid still has a fairly secure fit with the pail due to the o-ring. The slot should be cut to remove the pail lid.

The instructions are:
On the lid:
To open cut locks, To open cut locks, To open cut locks
On the closure:
Squeeze side at dot ↑
& unscrew, Reclose tightly



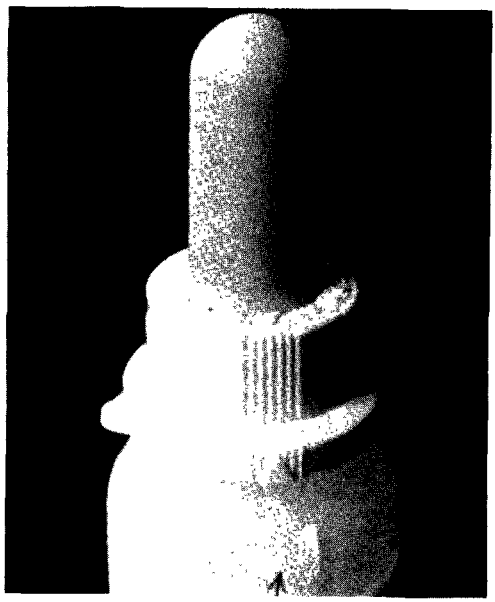


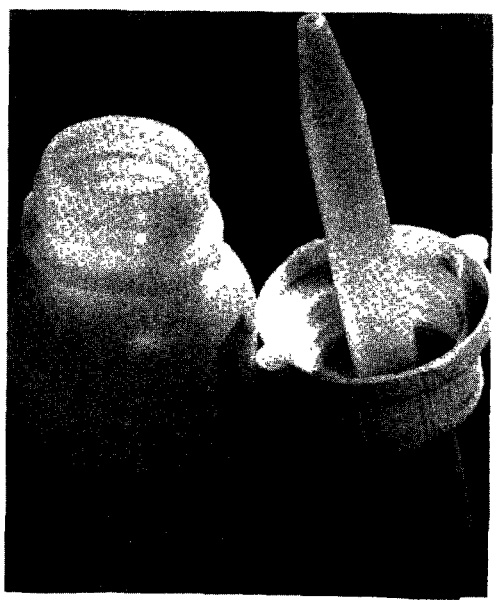
MANUFACTURER	MODEL	ASTM
Dougherty Brothers Company (Part of Owens-Illinois)	**Lifeguard (Dropper)**	**I B**

DESCRIPTION

The closure is a one piece plastic continuously threaded closure with a dropper assembly. The package is opened by squeezing at two designated points on the closure and simultaneously turning it counterclockwise. The exterior of the closure has two triangles, which are 180° apart and are the squeeze points, and two tabs 90° away from the squeeze points and 180° apart from each other. Inside the closure where the two tabs are located there are two inclined lugs which lock into two inclined lugs on the container neck finish when the package is closed.

The instructions are: Squeeze at △'s, While turning



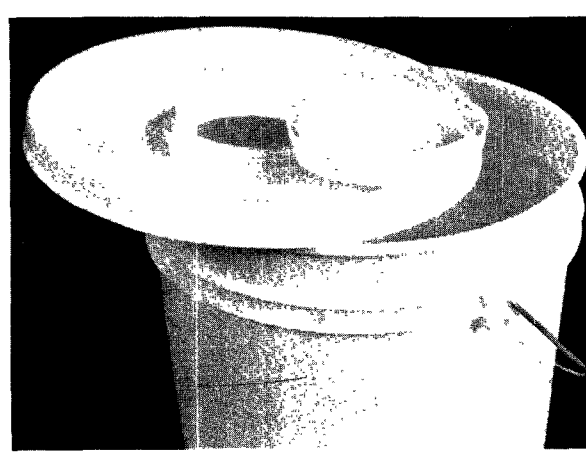


MANUFACTURER	MODEL	ASTM
Lettica Corporation and Sunbeam Plastics Corporation	**Open Head Pail/Squeeze Lok Closure**	**I B**

DESCRIPTION

The package consists of a plastic open head pail with a plastic lid and a plastic one piece continuously threaded closure on the lid. The package is opened by squeezing on the indicated side of the closure while turning the closure counterclockwise. At a 90° angle to the squeeze point there is a one lug extension on the closure. This luglike extension fits into the bayonet extension on the neck finish (thread) portion of the pail lid, preventing opening unless the closure is squeezed (This is marked by arrows in the photograph.) The pail lid has a groove with an o-ring in it (see photograph) which makes it difficult to remove the lid once it is snapped onto the pail.

The instructions are:
Squeeze side at dot↑
& unscrew,
Reclose tightly



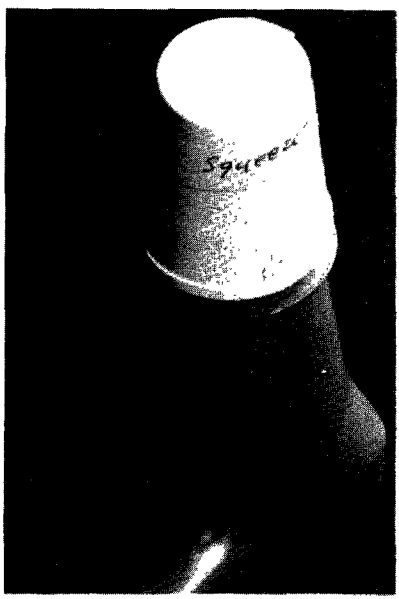
MANUFACTURER	MODEL	ASTM
Owens-Illinois	**Squeeze & Turn**	**I B**

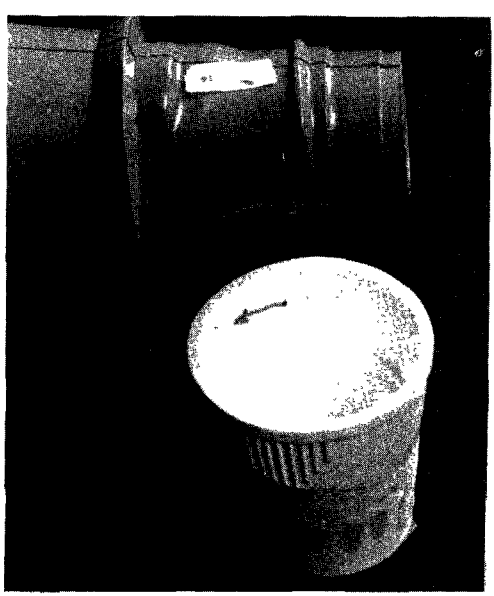
DESCRIPTION

This is a one piece plastic continuously threaded closure which is opened by squeezing two sides of the closure and simultaneously turning it counterclockwise. The outside of the closure has triangular shaped piping on the two squeeze points that are 180° apart. The inside of the closure has two vertical lines 90° away from the squeeze points. The lines lock into two bayonets on the closure neck finish (see arrows in photograph) keeping the package closed.

The instructions are:
↑ Squeeze cap sides ↑,

↙ Turn to open





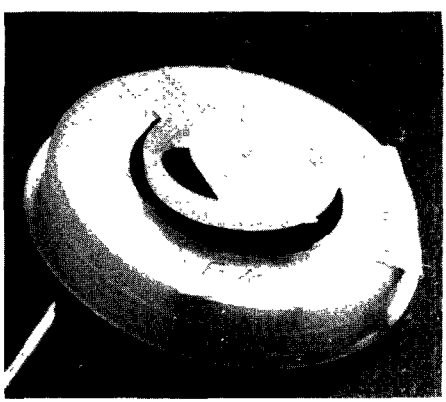
MANUFACTURER	MODEL	ASTM
Rieke Corporation	**Flexspout FS 10-7**	**I B**

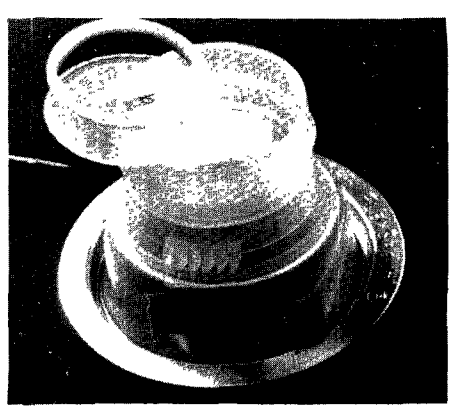
DESCRIPTION

This package consists of a crimped on flexspout with an inner plug, one piece plastic continuously threaded closure and an outer tamper-evident seal. The package is opened by removing the outer tamper-evident seal (marked FS-10-7 in photograph), lifting the two rings on the closure up and pulling the flexspout up to its open position, squeezing the closure at two specific points while turning counterclockwise and pulling out the inner tamper-evident plug. The child-resistant closure has two sets of four ratchets, which lock into two sets of six ratchets on the flexspout neck finish preventing the package from opening (see arrow marked areas in photograph). The inside of the closure has a wedge which the flexspout lip fits into, creating a secondary seal for the product (see photograph). The flexspout is for use with a tighthead pail where the entire flexspout unit (all four pieces) would be crimped onto the pail opening.

The instructions on the closure are:

↙Open ↘ Squeeze ribs, ←→, And turn, ↖Close tight↗



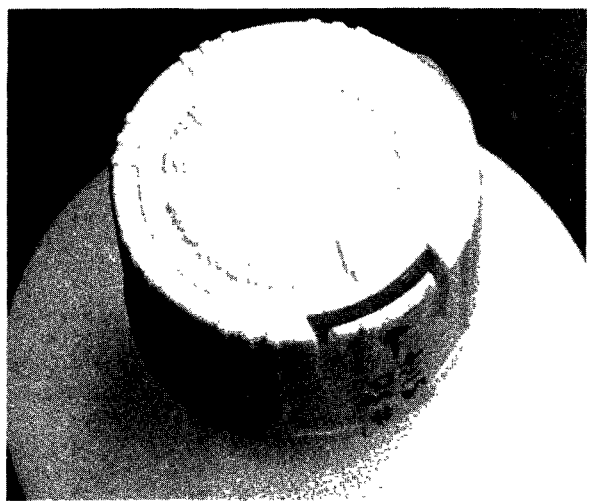


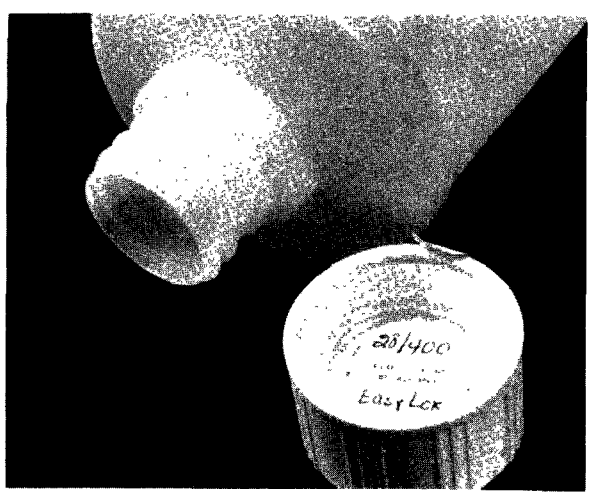
MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Easy Lok**	**I B**

DESCRIPTION

This is a two piece plastic/plastic continuously threaded closure. The closure is opened by pushing in on a tab on the cap while simultaneously turning it counterclockwise. The tab on closure is designed so the top of it (see arrow in photograph) is at the top of the closure and the clear plastic of the inner cap is visible at this location.

There are two sets of instructions which are:
Squeeze tab ←— , To unscrew
or
Hold tab in ←—, While unscrewing



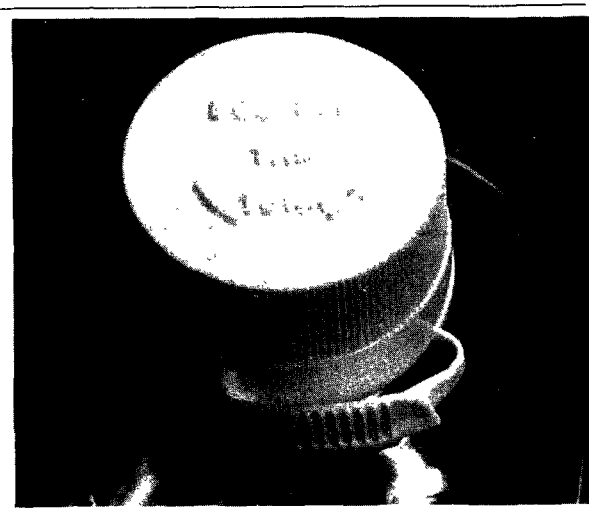


MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Snap Lok**	**I B**

DESCRIPTION

This is a one piece plastic continuously threaded closure with a tab. The closure is opened by pushing the tab in while turning the closure counterclockwise. The tab is on the closure side and has ribbing on it. The tab locks into a bayonet on the bottle preventing opening (back off) unless the closure is squeezed.

The instructions are:
Squeeze, Tab, ⟍Turn⟋
or
Press, Tab with, Thumb while, Unscrewing
or
An old version uses a picture.

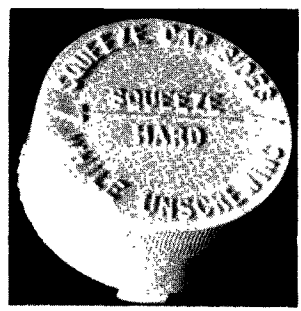


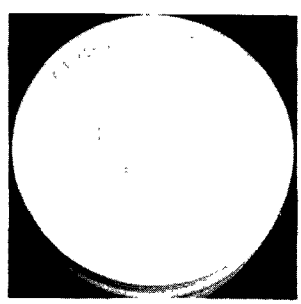
MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Squeeze Lok**	**I B**

DESCRIPTION

This is a one piece plastic continuously threaded closure. There are two models of this cap, the one lug or two lug version. Both styles are opened in a similar manner by squeezing at one or two points on the closure while simultaneously turning it counterclockwise. The two lug model involves two lugs 180° apart with ribbing areas denoting the squeeze points 90° away from the lugs. The one lug model has ribbing or a dot near the squeeze point (less than 90° away). Both models have each lug on the closure fit into a bayonet on the container (see arrows in photograph) and the closure cannot be opened unless squeezed so that the lug slides past the bayonet. This closure is used frequently on swimming pool chemicals.

The instructions are:
Squeeze tab, Squeeze ⟶, Hard, While unscrewing (1 Tab)
or
Squeeze cap sides, Squeeze,⟵ ⟶, Hard, While unscrewing (2 Lug)



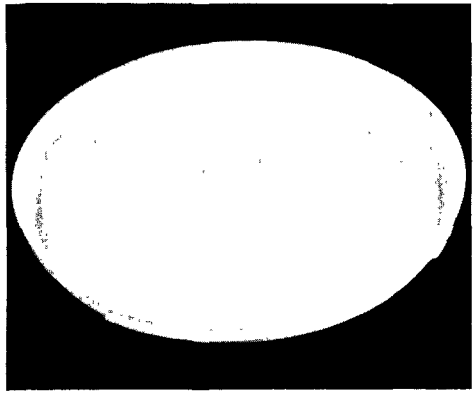


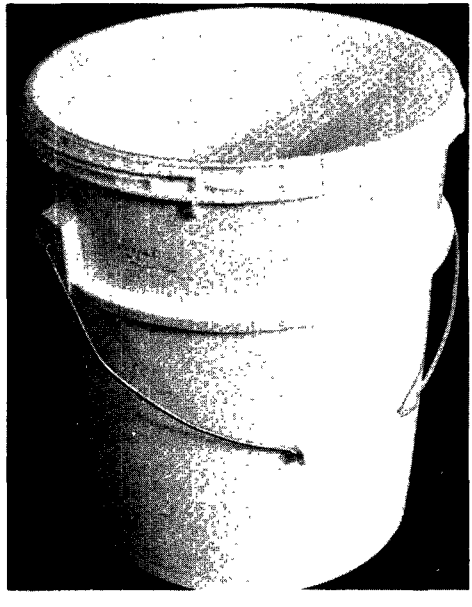
MANUFACTURER	MODEL	ASTM
Container Products, Inc.	**Screw Top Pail**	**I E**

DESCRIPTION

The package consists of a plastic open head pail and a plastic continuously threaded pail lid. The package is opened by using a device to turn the pail lid counterclockwise. The pail lid on the inside is threaded and has four sets of five bayonetlike grooves (see photograph). The bayonetlike grooves in the lid are used to lock four sets of five lugs/teeth on the pail neck finish (see photograph) so that the pail cannot be unscrewed easily (back off).

The instructions on the pail lid are:
Open ⟵, Close ⟵





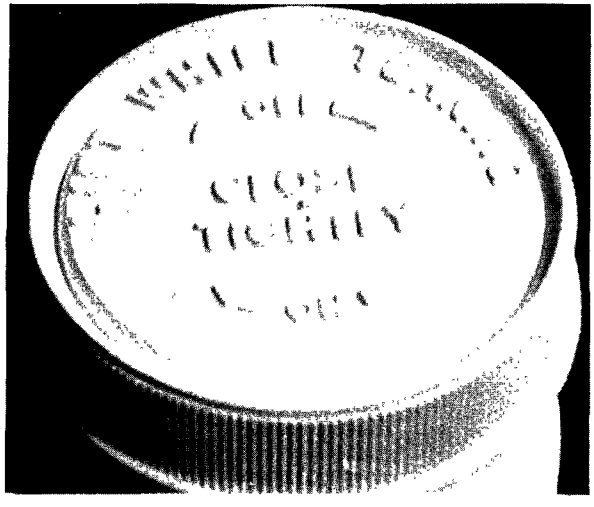
MANUFACTURER	MODEL	ASTM
Seaquist Closures	**Ring Guard**	**I F**

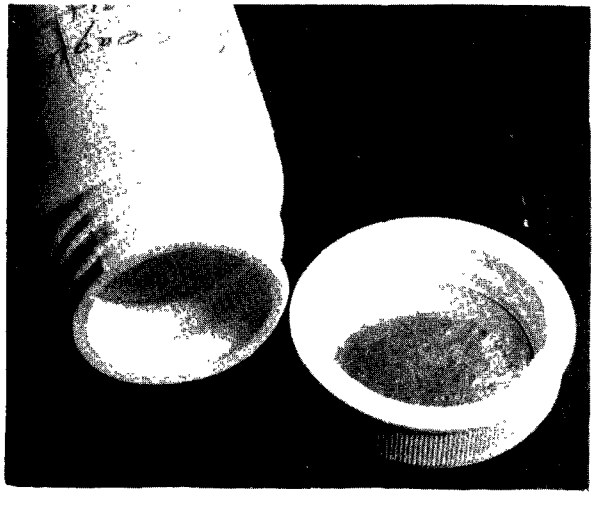
DESCRIPTION

This is a two piece plastic/plastic continuously threaded closure. The closure is opened by lifting up on the outer ring while turning it counterclockwise.

The instructions are:
Lift while turning,

Off
Close, Tightly,
On



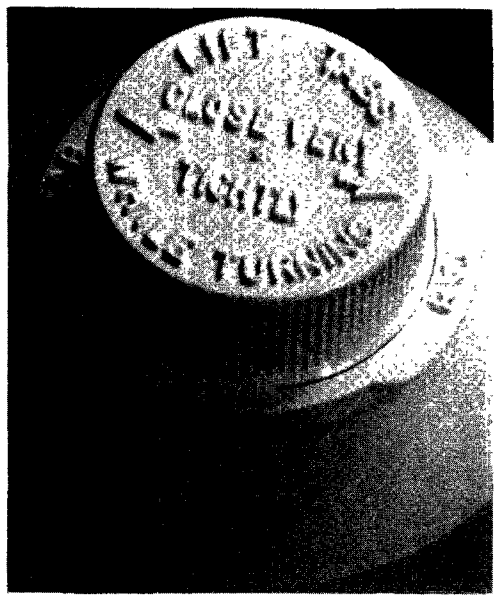


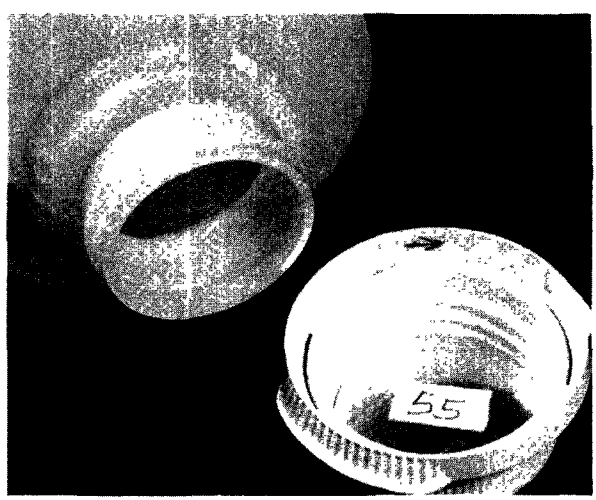
MANUFACTURER	MODEL	ASTM
Alcoa	**Tot-Gard II**	**I G**

DESCRIPTION

This is a one piece plastic continuously threaded closure. The closure is opened by lifting up two tabs while simultaneously turning it counterclockwise. The two tabs are 180° apart and have rachets on the inside of the closure under them which match rachets on the container neck finish (see arrows in photograph). The two sets of matching rachets lock the closure onto the container but lifting the tabs removes one set of rachets (closure) from the other (container).

The instructions are: Lift tabs, Close very, Tab ←— —→ tab, Tightly, While turning





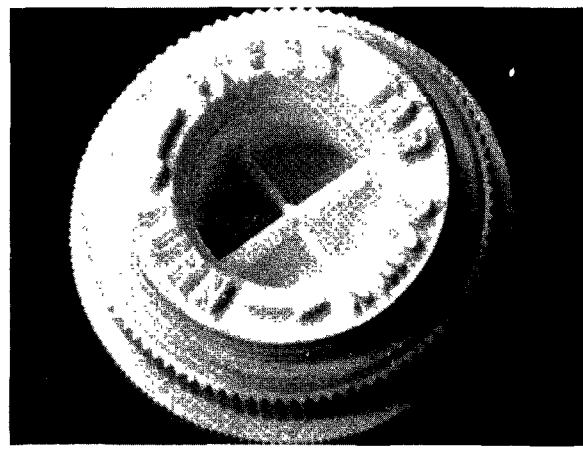
MANUFACTURER	MODEL	ASTM
M & M Plastics, Inc. (Part of Brockway)	**Reversible Cap "Pharmacy Mate"**	**I H**

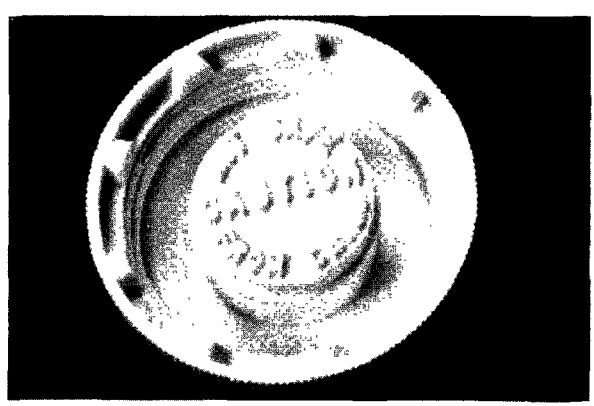
DESCRIPTION

This is a one piece plastic reversible continuously threaded closure. In the child-resistant mode the closure is opened by pressing down on a tab on the vial and simultaneously turning the closure counterclockwise. In the nonchild-resistant mode the closure is simply turned counterclockwise to open it.

In the child-resistant mode the inner threads on the closure match the outer threads on the vial and the ratchet on the vial's tab locks into one of the rachet teeth on the closure (unless the tab is pressed down and then the two rachets unlock). In the nonchild-resistant mode the outer threads on the other side of the closure match the inner threads on the vial.

The instructions are:
Child-resistant closure:
Press tab down
↘ Turn →
On tab:
Press
Nonchild-resistant closure:
Not safe, Caution, From child



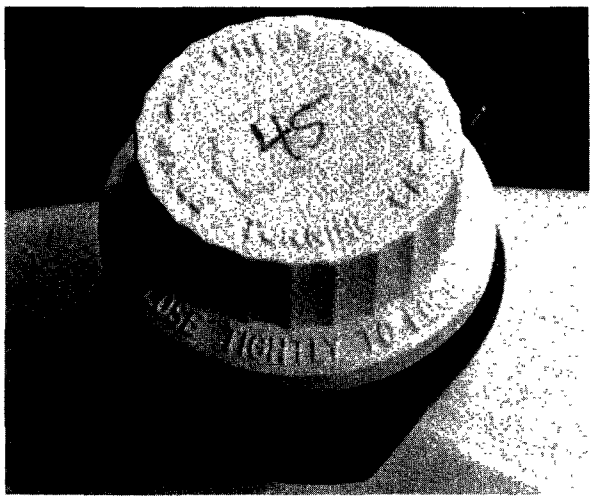


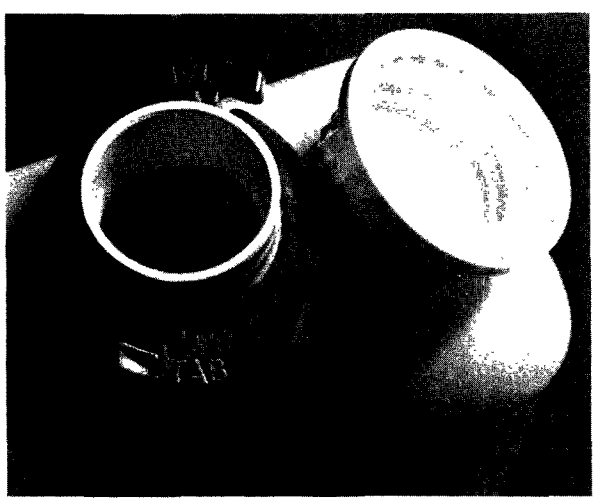
MANUFACTURER	MODEL	ASTM
Mack Wayne Closures Division (West Company)	**Mark IV**	**I H**

DESCRIPTION

This package consists of a one piece plastic continuously threaded closure and a plastic o-ring with two tabs which fits onto the container neck finish. The closure is opened by pushing down on the two tabs, which are 180° apart, and simultaneously turning the closure counterclockwise. The inside of the closure has rachet teeth around the entire bottom, which fit the two rachets on the o-ring's two tabs (see photograph). Note the rachets on the o-ring tabs lock the closure onto the container unless the tabs are pushed down The o-ring also has rachets that lock it onto the container neck finish.

The instructions are:
On the closure:
Press tabs , While turning cap,
Reclose tightly to lock.
On the o-ring
Tab, Tab



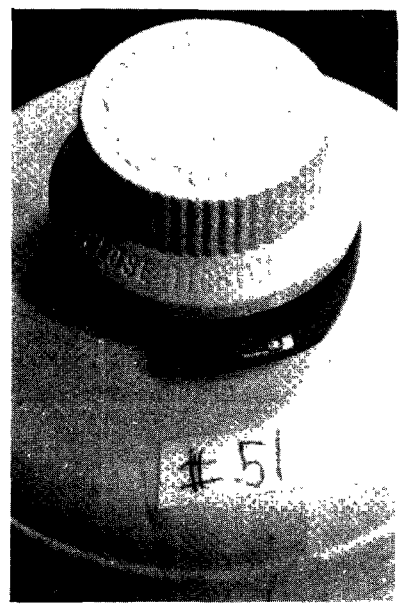


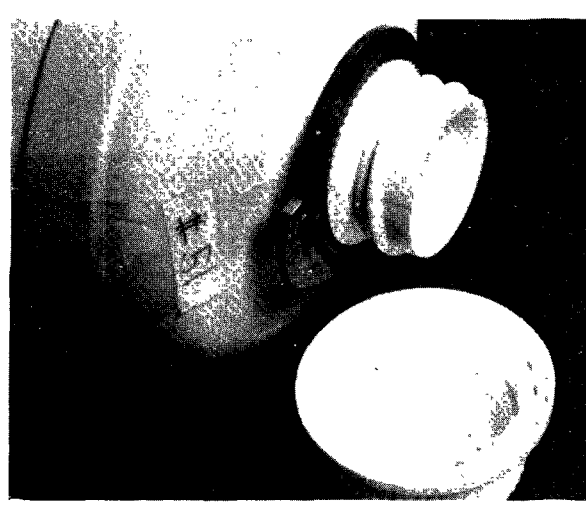
MANUFACTURER	MODEL	ASTM
Moldcraft, Inc.	**Saf-T-Klik**	**I H**

DESCRIPTION

The package is a one piece plastic continuously threaded closure and an o-ring with a tab that fits onto the container neck finish. The package is opened by pushing down on the tab and simultaneously turning the closure counterclockwise. There is a rachet on the tab on the plastic o-ring which locks into one of the rachets around the entire circumference on the inside bottom of the closure. The rachets are unlocked by pushing down on the tab.

The instructions are:
On the closure·
Press tab , While turning cap, Reclose tightly to lock, Reclose tightly to lock
On the o-ring
Tab





MANUFACTURER	MODEL	ASTM
Brockway Glass Company	**Uni-Tight**	**II A**

DESCRIPTION

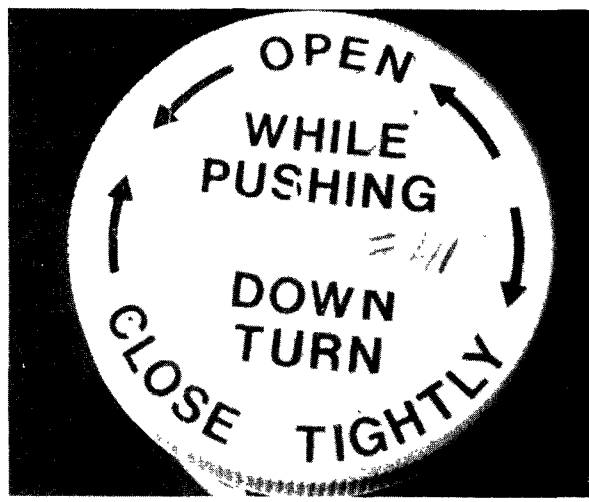
This closure is a one piece plastic lug-bayonet closure. The package is opened by pushing down and simultaneously turning the closure counterclockwise The interior of the closure has square lugs that fit into upside down "L" shaped bayonets on the container (see arrow in photograph).

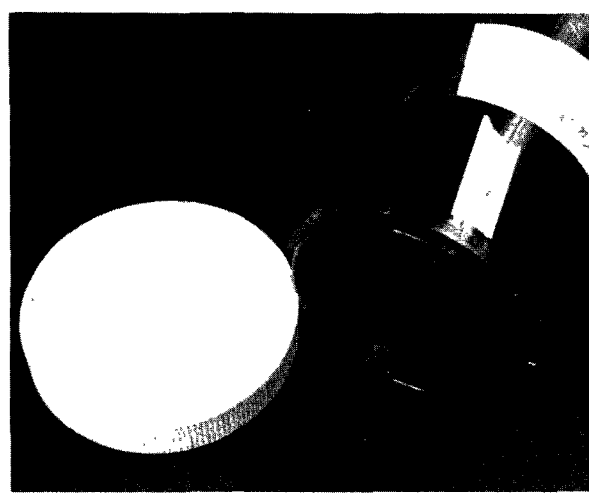
The instructions are:

Open

While, Pushing, Down, Turn

Close tightly



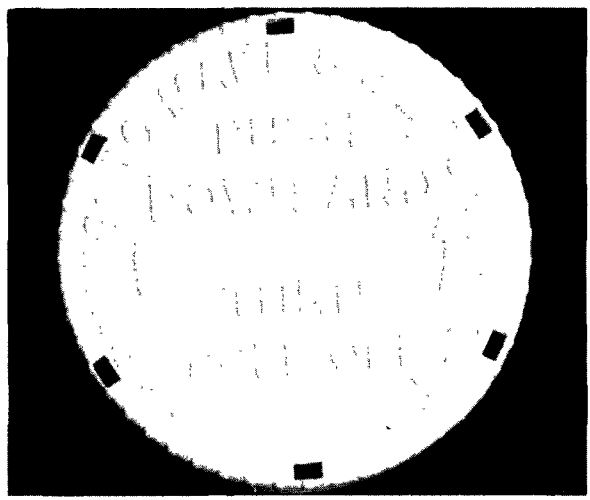


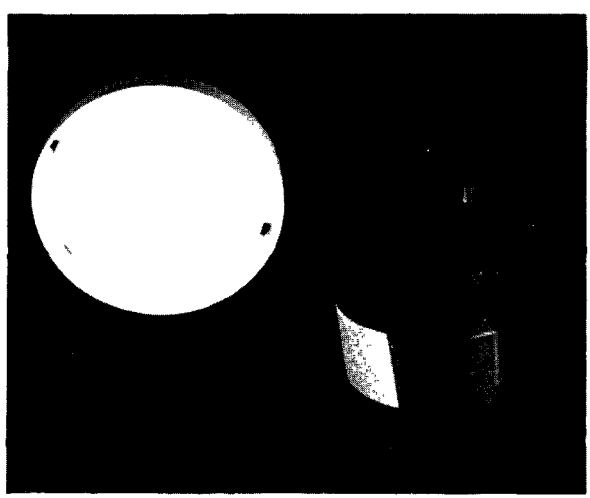
MANUFACTURER	MODEL	ASTM
Inventive Packaging Corporation	**Snap-Or-Lock**	**II A**

DESCRIPTION

This is a one piece plastic lug bayonet type closure. The closure is opened by pushing down and simultaneously turning it counterclockwise. The lugs are in the closure and the bayonets, which are in the shape of upside down "L's", are on the vial. The top of the closure above the lugs has holes in it. The inside of the closure has a concentric circle, which fits into the vial like a plug.

The instructions are: Warning: to make safe turn right, Push, Down and, Turn, Pull off



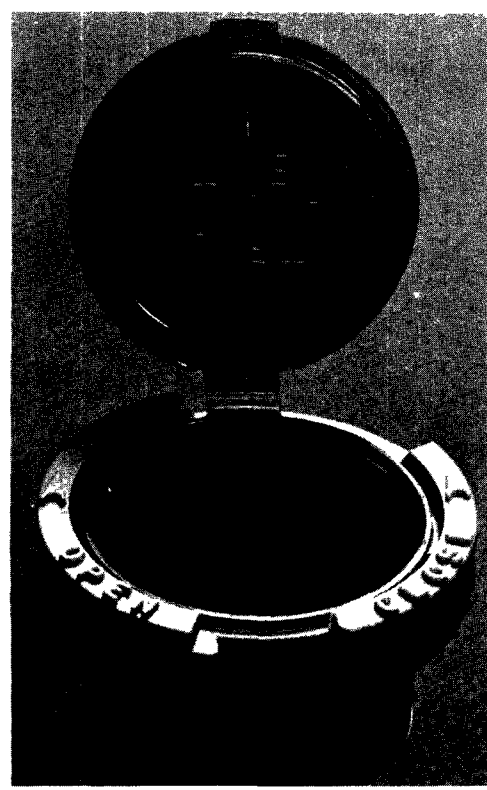


MANUFACTURER	MODEL	ASTM
Continental Carlisle Company	**Unikon Child-Resistant Container**	**III** (no subset) Rotate "o" ring to expose tab & then lift tab

DESCRIPTION

This is a one piece plastic snap closure with a captive hinge. The package is opened by rotating the o-ring (child-resistant locking ring) clockwise until the closure tab is exposed, then lifting the tab. The o-ring is attached to the vial and it prevents opening the package in the closed position by hiding the tab.

The instructions are:
On the closure:
Lift, Tab, ↓
On the o-ring:
< Open close >



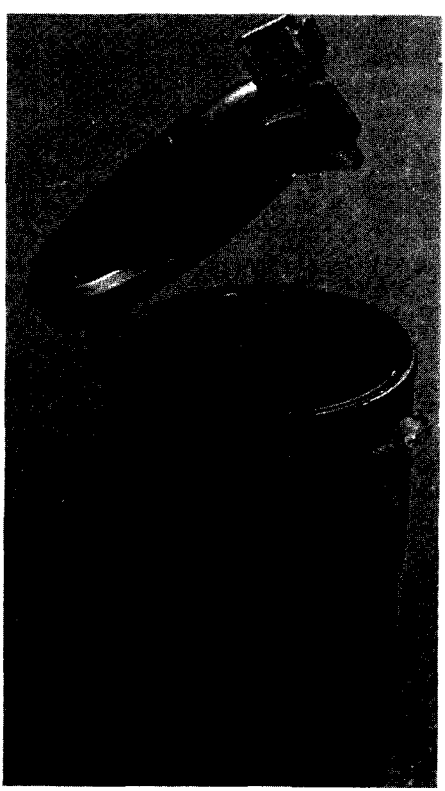
MANUFACTURER	MODEL	ASTM
Internova Corporation	**Flap Lok** **Flap Lok Vial**	**III** (no subset) Lift tab & then push up cap

DESCRIPTION

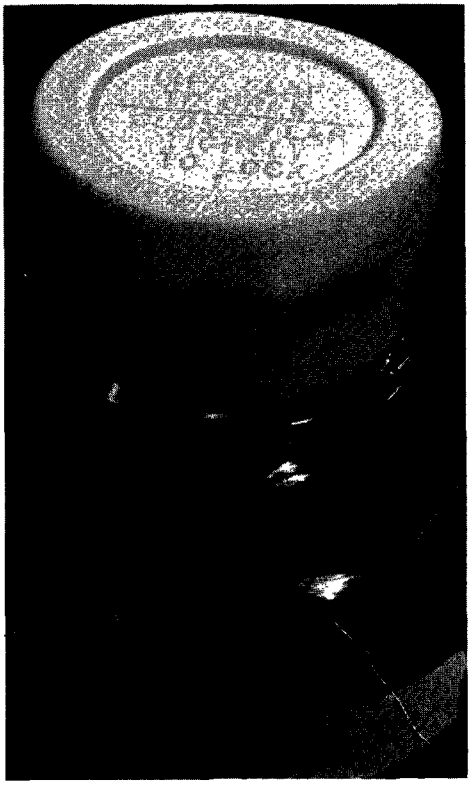
The package consists of a one piece plastic snap cap with a captive hinge. The package is opened by lifting up a tab on the closure lid followed by pushing up on the side of the cap adjacent to the tab. The Flap Lok closure unit is permanently *snapped onto the container* neck finish. The Flap Lok closure unit consists of the closure lid and a container neck finish portion. The Flap Lok vial and closure are one unit.

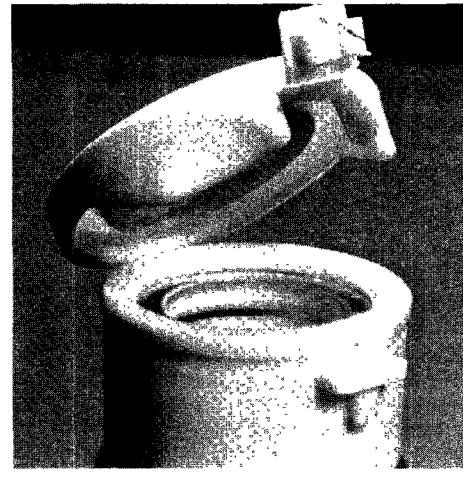
Both designs of the Flap Lok have the inner part of the closure lid with a groove for the neck finish lip portion of the container to fit into and the neck finish directly below the tab on the lid has a "T" shaped tab (marked with an arrow on vial in photograph). The closure lid tab locks onto the neck finish on the container by a groove in the tab fitting the vertical portion of the "T" on the container. Note both versions can have a tamper-evident feature.

The Flap Lok directions are:
Lift flap, To open,—— ,
Close flap, Tightly,
To lock, 1, Push cap up, ↓
The Flap Lok vial directions are:
Lift flap, To open, —— ,
Close flap, Tightly,
To lock, Push Cap up, ↓



(continued on next page)

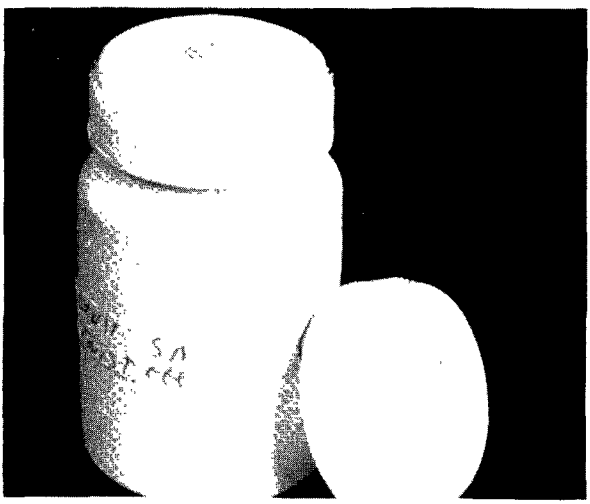


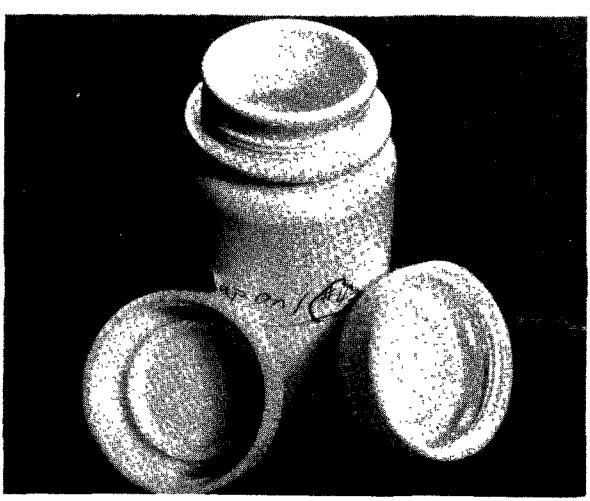


MANUFACTURER	MODEL	ASTM
Stull Engraving Company	**Snap On/Twist Off CR**	**III** (no subset) (Snap On Twist Off)

DESCRIPTION

This is a one piece plastic closure that snaps onto the container and is opened by twisting it off (turning and simultaneously pulling it off) The inside of the closure has continuous threading which matches the container neck finish, and six ledges that lock it onto the container lip when snapped onto it.





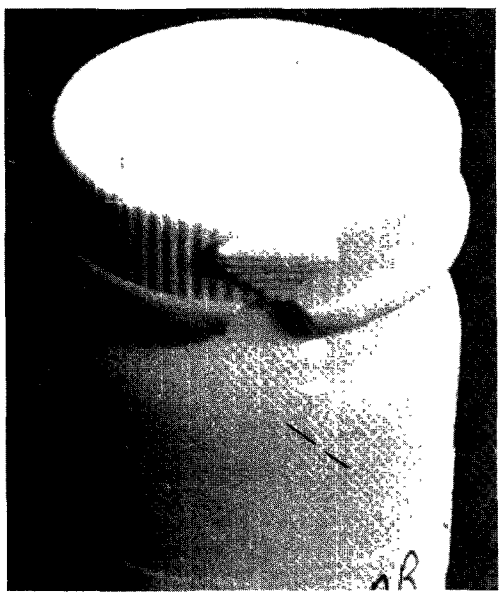
MANUFACTURER	MODEL	ASTM
Calmar, Inc.	**Snap Safe**	**III A**

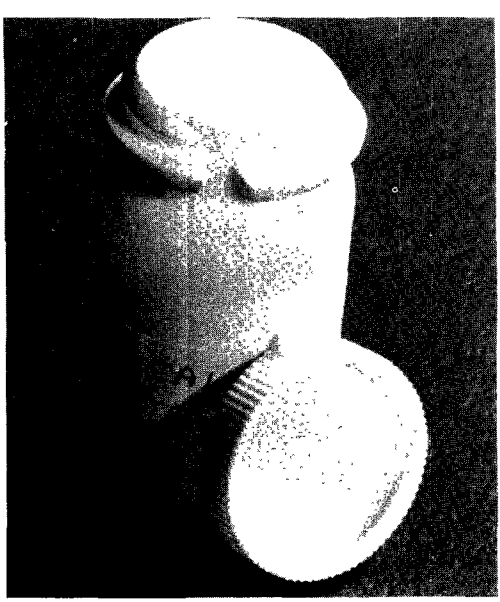
DESCRIPTION

The closure is a one piece plastic snap cap. The closure is opened by aligning the arrow on the cap with the arrow on the container neck finish and then pushing up on the closure arrow. The arrow on the container neck finish is in the shape of a triangular groove (point at the top on the neck finish) The arrow on the vertical part of the closure is in the shape of an upside down triangle.

The inside of the closure has a ridge where the arrow is which fits into a groove on the container neck finish when the arrows are aligned, permitting the package to be opened.

The instructions are. Line-up, Arrows, Push-off





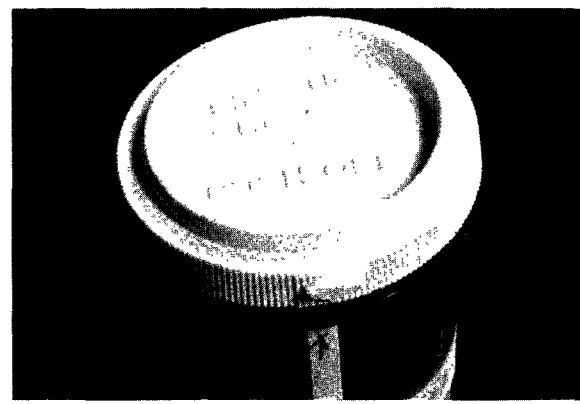
MANUFACTURER	MODEL	ASTM
Loral Packaging, Inc. (Lermer)	**Snap-Safe Dual Purpose Closure**	**III A**

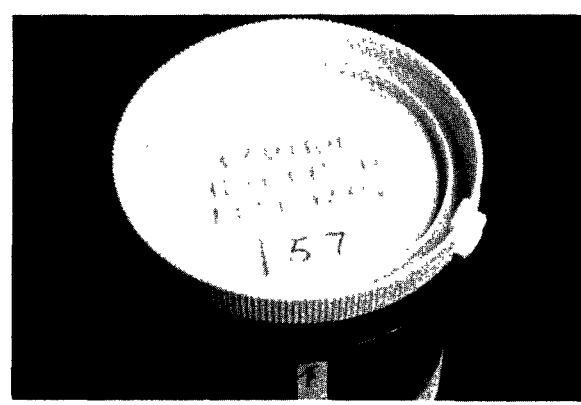
DESCRIPTION

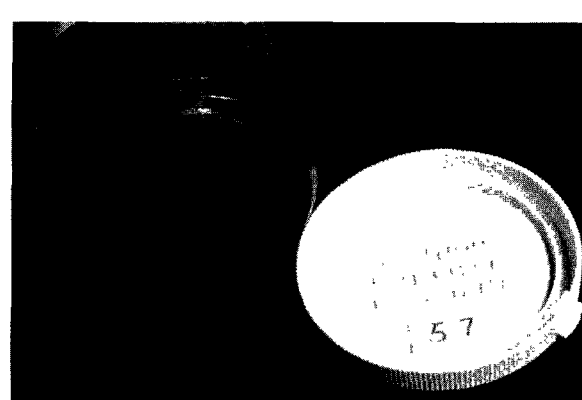
This is a one piece plastic reversible snap closure. In the child-resistant mode it is opened by lining up the arrow on the closure with the one on the vial and then pushing off the closure. In the nonchild-resistant mode the closure is opened by pushing it up.

In the child-resistant mode the closure fits over a lip on the vial. The lip has an opening at the arrow to allow the cap to be opened when both the cap and vial arrows are aligned. In the nonchild-resistant mode the cap fits into the vial.

The instructions are:
Child-resistant:
Line-up, Arrows, Push off
Nonchild-resistant:
Caution, Not child, Resistant
or
Not, Child, Safe





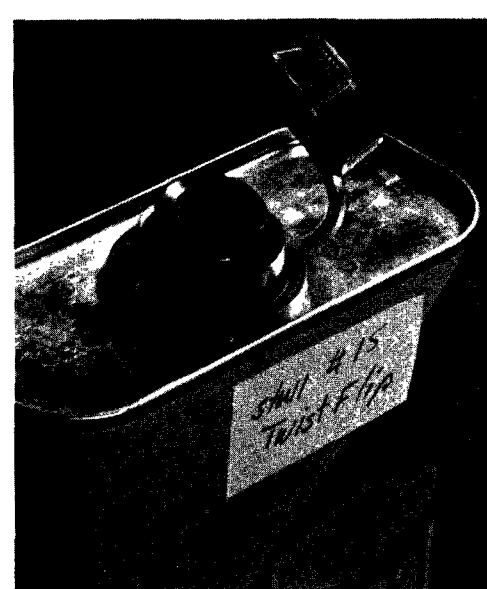


MANUFACTURER	MODEL	ASTM
Stull Engraving Company	**Twist Flip (4492)-Captive Hinge**	**III A**

DESCRIPTION

The package is a one piece plastic snap closure which is permanently attached to the container neck. The closure has a tab which is protected (in the locked or child-resistant position) by a protrusion on the container neck fitment. The closure is opened by twisting the tab to the right or left and lifting up on the tab once it is exposed. In the open position the cap is attached to the container by a plastic strip (captive hinge)

The instructions are:
To open, ***Twist,*** Flip

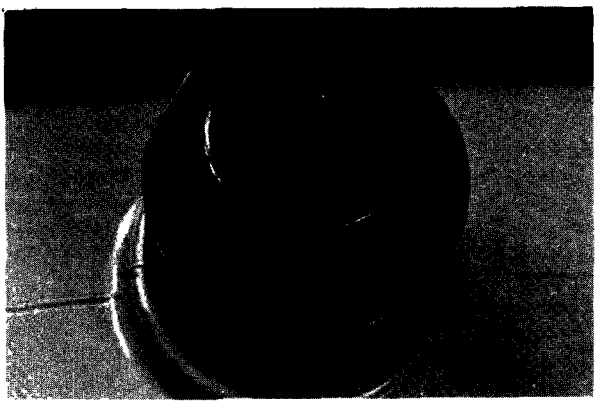


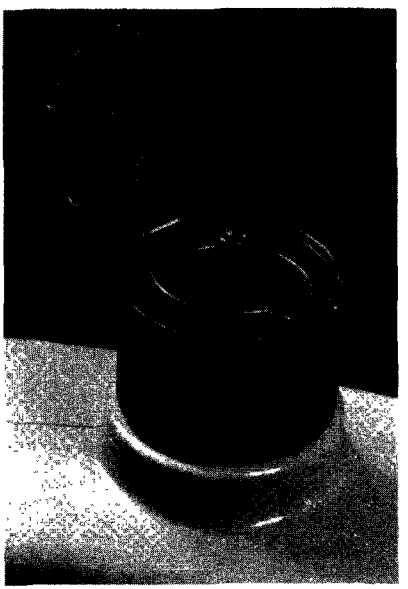
MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Flip Lok (28-410 FL)**	**III A** (Slide then lift up)

DESCRIPTION

This is a one piece plastic dispensing snap cap with a captive hinge (plastic strip). The closure, which is permanently attached to the container, is opened by sliding the lid past a rectangular protrusion on the bottom part of the closure and then lifting up on the top part of the closure. The closure attached by a captive hinge in the open position reveals a dispensing spout (see photograph) which is straight in a current model (it was curved in an older version). The closure is permanently attached to the container neck by matching continuous threads and rachets locking the two parts together. This package is used often for liquid toilet bowl cleaners.

The instuctions are:
Slide lid, ↓ And lift





MANUFACTURER	MODEL	ASTM
Continental White Cap	**Pop Lok External (PLE)** **Pop Lok Plug (PLP)** **Pop Lok Plug (PSP)** **Pop Lok F Style (PLF)** **Pop Lok Dispensing (PLD)**	**III D(1)**

DESCRIPTION

The closure is a one piece plastic snap cap which is opened by pressing on a dot which is on a tab and then lifting the tab. The closure comes in five models, which are:

(A) PLE is an external removable snap cap.

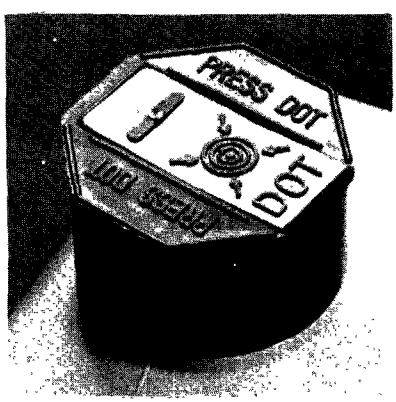
(B) PLP is a removal plug which fits into container neck.

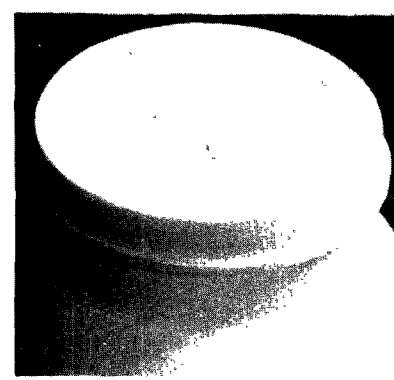
(C) PSP is a removable plug for use with containers with metal ends.

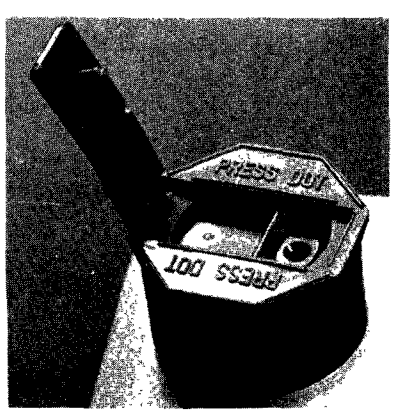
(D) PLF is a permanently attached dispensing closure on an "F" style can.

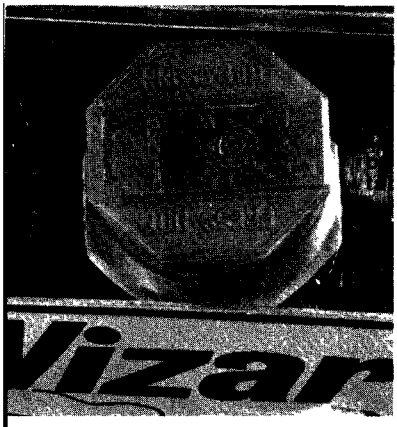
(E) PLD is a permanently attached dispensing closure on a plastic container.

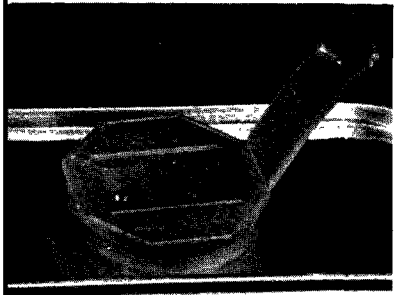
The instructions on these models (as shown in the photograph) are:
Press dot then pull tab, o (PLE)
or
Press dot lift tab and pull, (PLP)
or
To open: pull tab up, Press dot lift tab and pull, , To open: pull tab up (PSP)
or
Child-resistant cap, Press dot, dot,
Press dot, To open: Press *thumb-, Nail firmly on, Dot in* center, Of cap. Lift, Tab and pour., To close:, Simply snap, Tab shut (PLF)
or
Press dot, dot, Press dot (PLD)

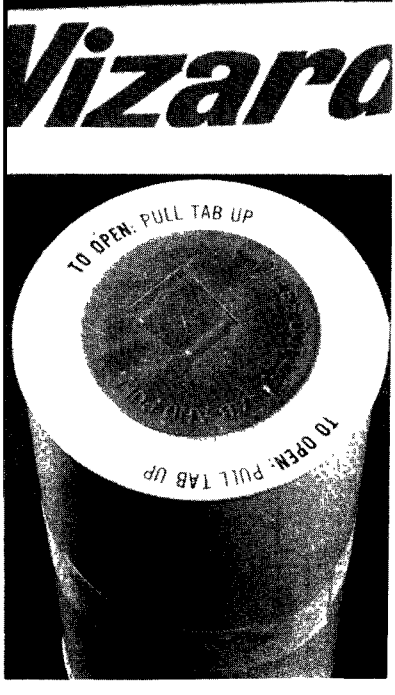


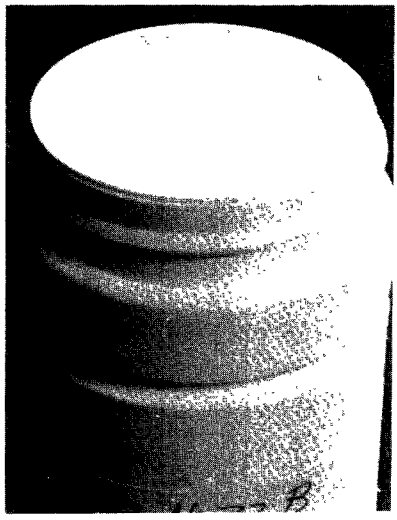









TO OPEN: PULL TAB UP
TO OPEN: PULL TAB UP



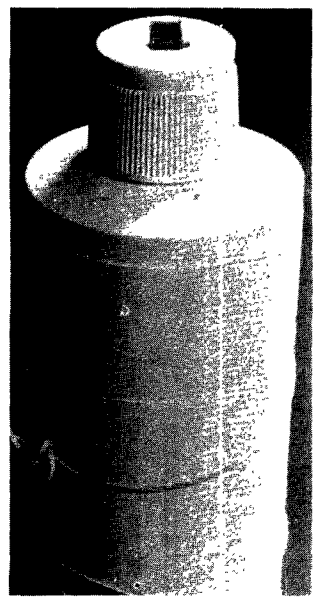
MANUFACTURER	MODEL	ASTM
Polytop Corporation	**PS 211 (ToggLoc)** **PS 194 (ToggLoc)**	**III D(1)**

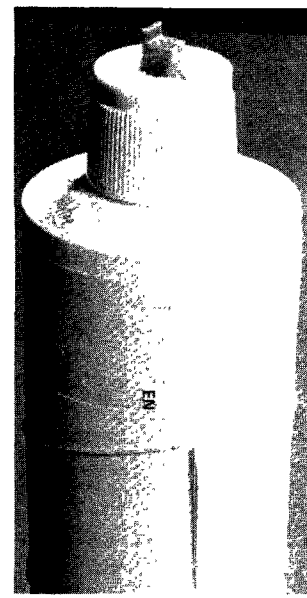
DESCRIPTION

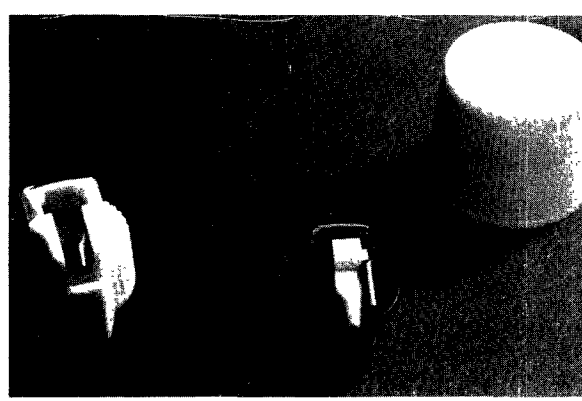
The closure is a one piece plastic snap closure with a dispensing spout, which is permanently attached to container by continuous threading and matching rachets on the closure and container. The closure is opened by pushing down on a groove in the spout and then lifting it up. There are two models of this closure The PS 211 has horizontal lines on the spout and closure top. The PS 194 has an angle jet spout and horizontal lines on the spout.

The PS 194 instructions are:

Push





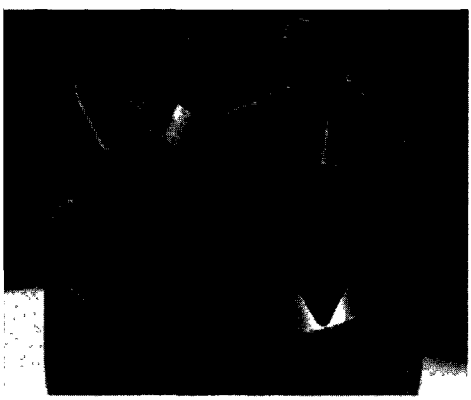


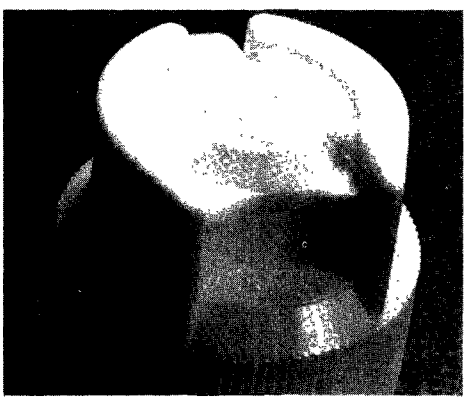
MANUFACTURER	MODEL	ASTM
Stull Engraving Company	**Easy Flip (2008)-Captive Hinge**	**III D(3)**

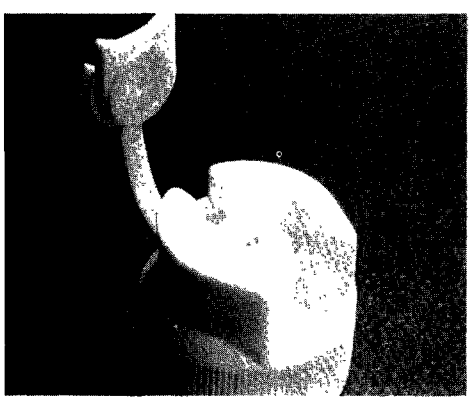
DESCRIPTION

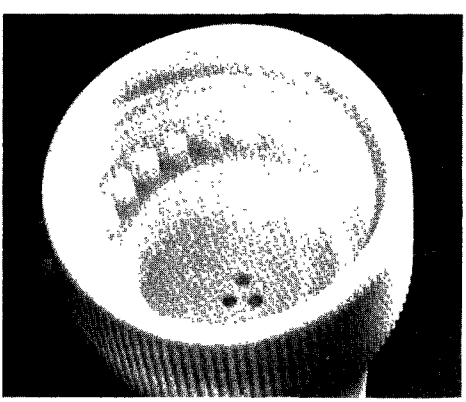
This is a one piece plastic snap closure which is permanently attached to the container by continuous threading and interlocking rachets on the cap and container neck finish. The closure may also be permanently attached to the container by snapping it on. The closure is opened by pushing it up, but it remains attached to the container by a plastic strip (captive hinge). The closure has a slight indentation where it may be pushed up. This type of closure may be found on toilet bowl cleaners.

The instructions are: Flip, ↓









MANUFACTURER	MODEL	ASTM
Cin - Made Corporation	**10 - T Style Container/Friction Plug**	**III G**

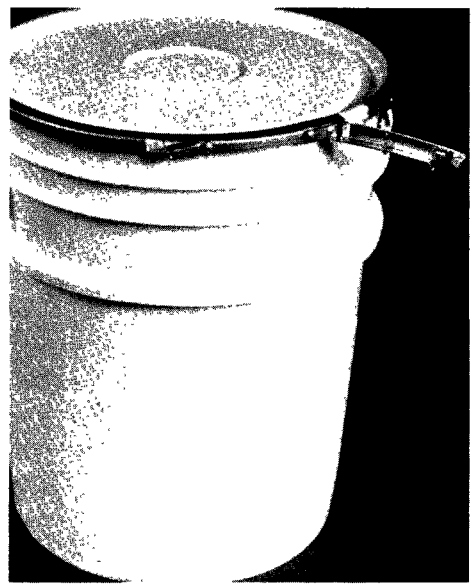
DESCRIPTION

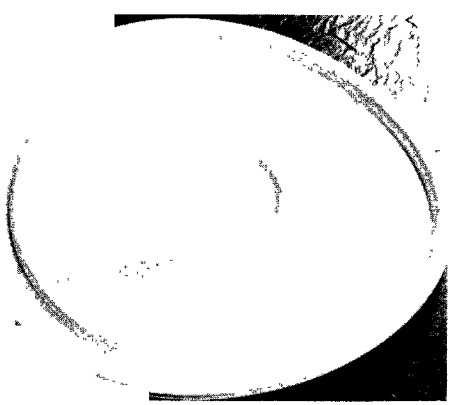
The package consists of a fibreboard container and a friction fit metal plug which requires a tool to open it. The container has two metal ends and the plug is snapped into the top metal rim to close it.

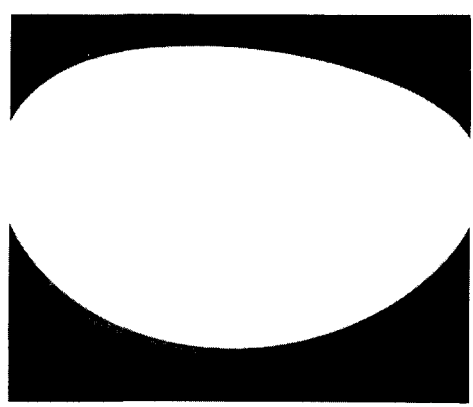
MANUFACTURER	MODEL	ASTM
Container Products, Inc.	**Lever Lok**	**III G**

DESCRIPTION

The package consists of a plastic open head pail, a plastic snap lid and a metal lever/toggle band. The package is opened by using a device to lower the toggle, lift the lever perpendicular to the lid (see photograph), remove the metal band, and pry/lift the pail lid off the pail. The lever and toggle on the ring fit together preventing the ring from being loosened and removed.







MANUFACTURER	MODEL	ASTM
Continental Fibre Drum	**Leverpak**	**III G**

DESCRIPTION

The package consists of an open head fibreboard drum, a metal snap lid and a metal lever/toggle band. The package is opened by using a device to lower the toggle, lifting the lever out perpendicular to the lid (see photograph), remove the metal band, and pry/lift the lid off of the drum. The metal lid has an o-ring inside of it to help seal the lid and the container lip together (see photograph). The lever/toggle metal ring fits together in use preventing the ring from being loosened and removed.

The instructions on the lid are:

To open,
1. Use, Screwdriver, To pry lock, ***Down,*** Pull out, ***Handle,*** 2.
To Re-lock,
1. Hold handle ***in,***
2. Push, Lock up, ***Firmly***

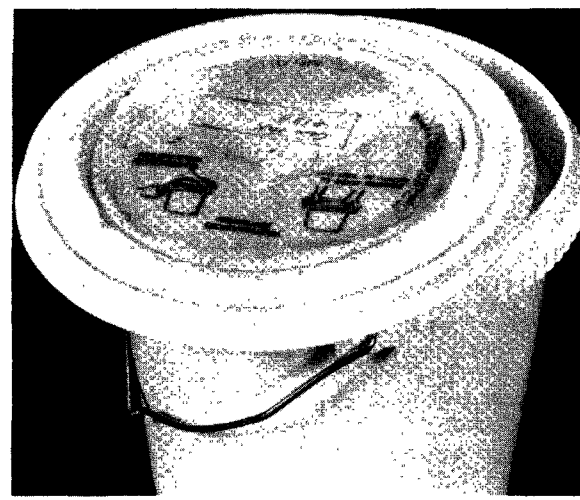
The instructions on the metal ring are:
Pry √

MANUFACTURER	MODEL	ASTM
Gen Pak Corporation	**Pryoff Open Head Pail**	**III G**

DESCRIPTION

The package consists of a plastic open head pail and a one piece plastic snap on lid. The package is opened by prying the lid off the pail with a tool. The package comes in various models dependent on the size. The largest model (13B in photograph) has the lid snap onto the container, and fit into a groove on the container, the tool is inserted in a slot in the outer ring of the container groove to lift the lid off. The other sizes (13A in photograph) have a sealing groove inside their lid for the container lip to fit into and the lid fits onto the container *without* any groove on the container. The container comes with or without a bail (handle).

The instructions are:
Pry off lid, Pry off with quarter or screwdriver, Check for complete seal, Use heel of hands to snap closed
or
Pry off lid, Pry off with, Screwdriver, Check for, Complete seal, Use heel of hands, To snap closed
or
Child-resistant package, Insert screwdriver, In slot and lift, Check for, Complete seal, Use heel of hand, To snap closed

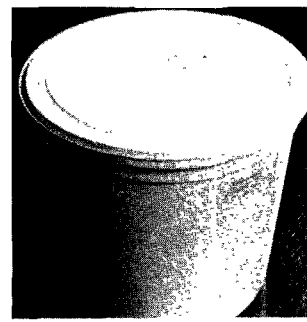


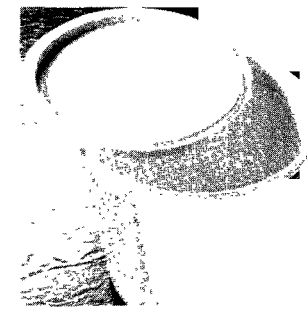
MANUFACTURER	MODEL	ASTM
Imperial Plastics	**Security Seal - T02CR T05CR & T05CRB T10CR & T10CRB**	**III G**

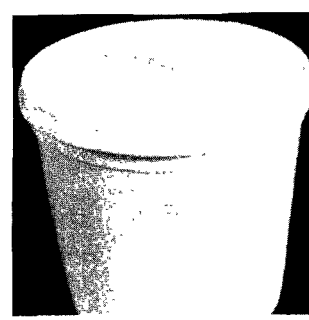
DESCRIPTION

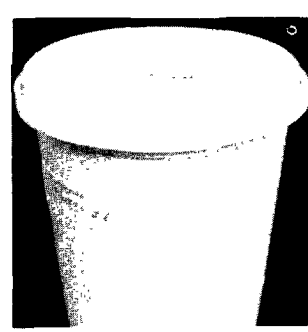
The package consists of a plastic open head pail and a one piece plastic snap on lid. The package is opened by using a device to pry the lid out of the container groove and lifting it off of the pail. The package comes in various models dependent on size. The smallest size lid on the inside has an angled single seal groove (#6 in the photograph with an arrow indicating the groove) for the container lip to fit into; the other two sizes (marked by #4 and #5 in the photograph have a single groove and no groove inside the lid, respectively, for the container to fit into. All three plastic containers have two concentric rings with a groove between them. The container groove is for the side of the plastic lid to fit into at the same time as the container lip (inner concentric circle) fits into the snap lid The container comes with and without a plastic handle (bail).

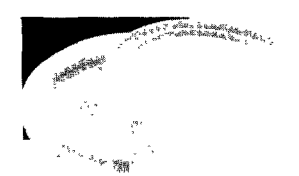
The instructions on an older version of the package are:
To Open:, Place Coin in groove -, Pry and lift lid off,
To Close:, Place lid on container -, Press edges down, Snapping lid on







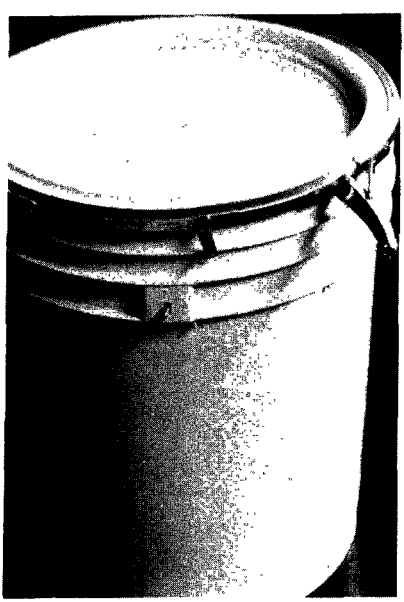


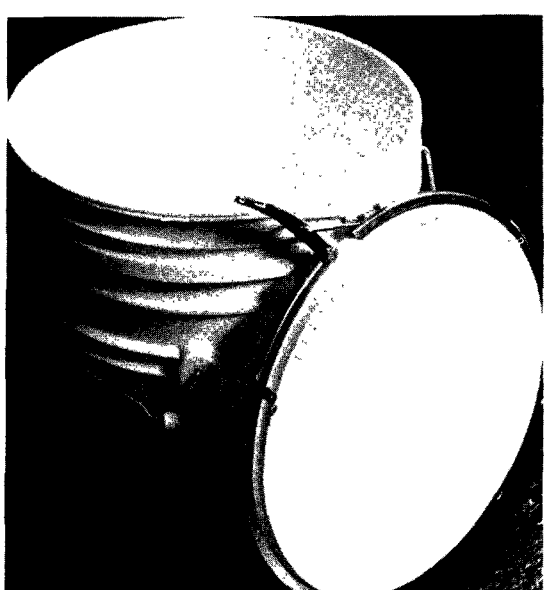


MANUFACTURER	MODEL	ASTM
Plastican, Inc.	**CR Lever/Toggle Metal Band & Open Head Pail**	**III G**

Description

The package consists of a plastic open head pail, a plastic snap lid and a metal lever/toggle band. The package is opened by using a device to lower the toggle (see photograph), lifting the lever out perpendicular to the lid (see photograph), removing the metal band, and prying/lifting the pail lid off the open head pail. The pail has a plastic lip and the lid snaps onto it. The lid on the inside has a concentic circle area which is lower than the outer rim. This inner concentric area has ribbing (marked in photograph). The pail lid and pail are firmly attached not only by snapping onto each other but also by the metal ring. The lever and toggle on the ring fit together preventing the ring from being loosened and removed.

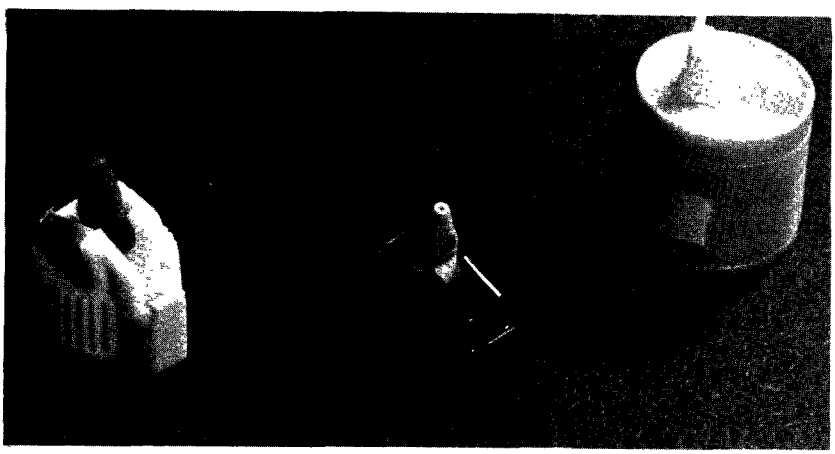




MANUFACTURER	MODEL	ASTM
Polytop Corporation	**PS 185 (Loctop)** **PS 186 (Loctop)**	**III G**

DESCRIPTION

The closure is a one piece plastic snap closure with a dispensing spout. The closure is friction fit permanently to the container. Both models have the spout fit into a rectangular groove on the closure. The spout is removed from the groove by a fingernail or some device to open it.

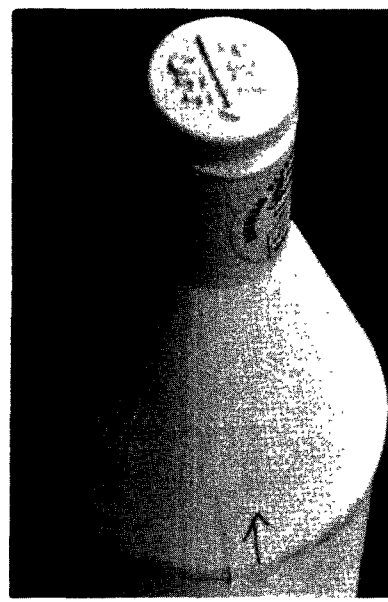


MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Snap Cap**	**III G**

DESCRIPTION

This is a one piece plastic snap closure which requires a tool to open it. The closure has a slight tab beneath which the tool is placed to pry it off.

The instructions are:
Pry, ⟶ , Off (on the closure)
and
Pry off cap, Use coin or key (on the bottle)



MANUFACTURER	MODEL	ASTM
Weatherchem Corporation	**Tecloc**	**III G**

DESCRIPTION

The package consists of a composite can and a plastic friction fit plug. The package is opened by using a coin or tool to pry the plug off of the top of the can. There are three types of openings under the plug which are: a teaspoon (1/2 circle), a circle, and sprinkle holes.

The instructions are: Child-resistant top, Open, With coin ⟶, Or tool, Replace cap for safety

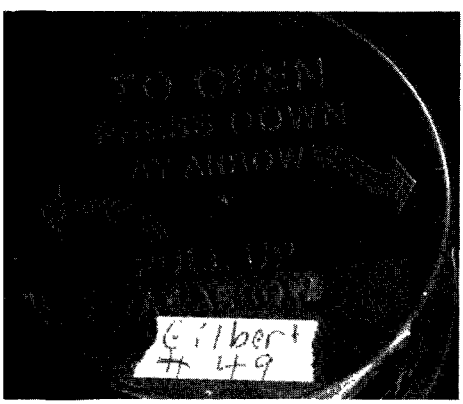
MANUFACTURER	MODEL	ASTM
Gilbert Plastics, Inc.	**Tilt Top**	**VII** (aerosol no subset) Localized push to release, followed by localized pull to release & lift off cap (actuates normally)

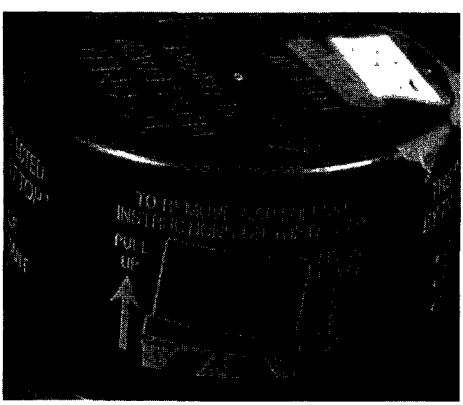
DESCRIPTION

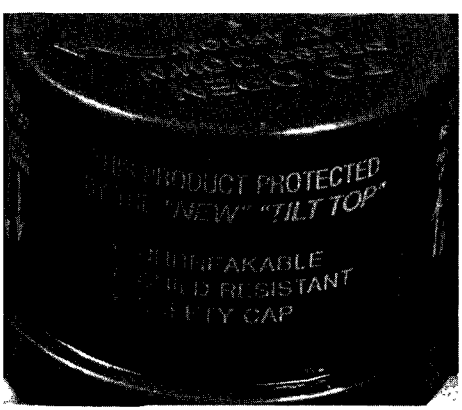
This is a one piece plastic aerosol overcap which fits onto the rim of a standard aerosol can. The aerosol overcap is removed by pressing down at one location, followed by pulling up at a location 180° away, and then removing the cap. The action resembles a see saw. The inside of the closure has four rims 90° apart and a triangle under three of the four rims. The four rims and three triangles are used to lock the overcap onto the aerosol can. The rim without a triangle is below the press down point on the cap to start the fulcrum see saw action. The actuator activates normally on the aerosol can.

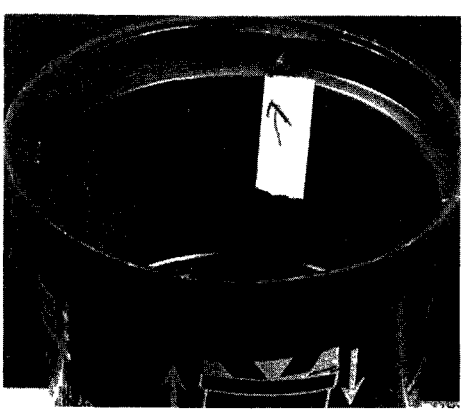
The instructions are:

On top:
To open, Press down, At arrow →, ← Pull up, At arrow
On the side:
This product protected, By the "New" "Tilttop", Unbreakable, Child resistant, Safety cap, To remove cap follow, Instructions on top of cap, Pull, Up, ↑ Press, Down, ↓







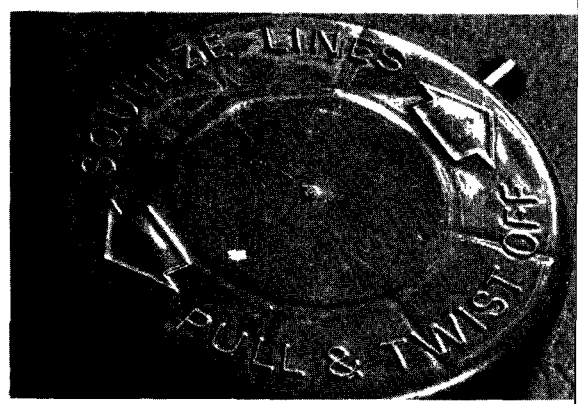


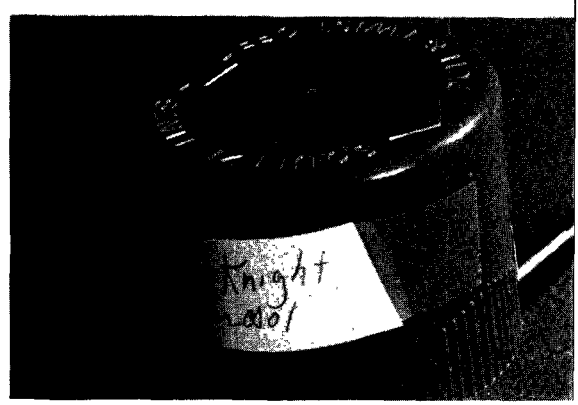
MANUFACTURER	MODEL	ASTM
Knight Engineering & Molding Company	**Knight's Child-Resistant Cap**	**VII A**

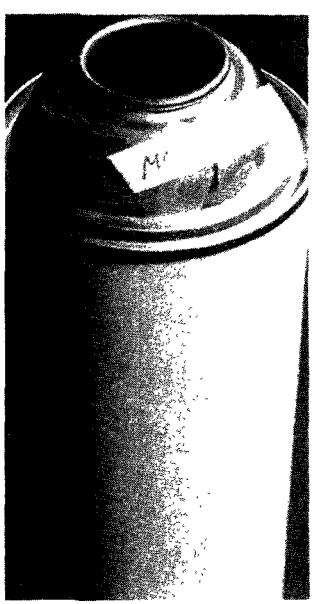
DESCRIPTION

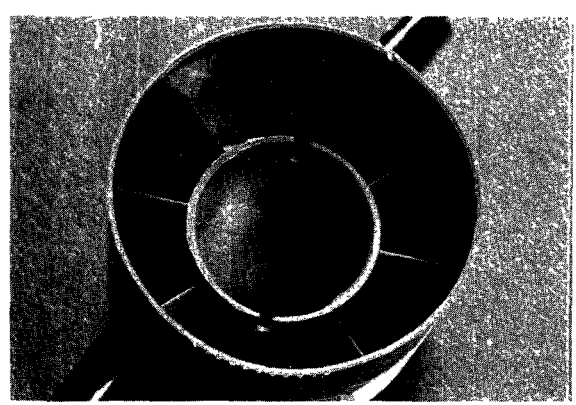
This is a one piece plastic aerosol overcap. The aerosol package is opened by squeezing two points 180° apart and simultaneously pulling and twisting the overcap off. Inside the overcap there is one cylinder with two slots 180° apart at the squeeze points, which fits onto the aerosol mounting cup on the can (area where the valve is). The aerosol actuates normally.

The instructions are: Squeeze lines, ←— —→, Pull & twist off









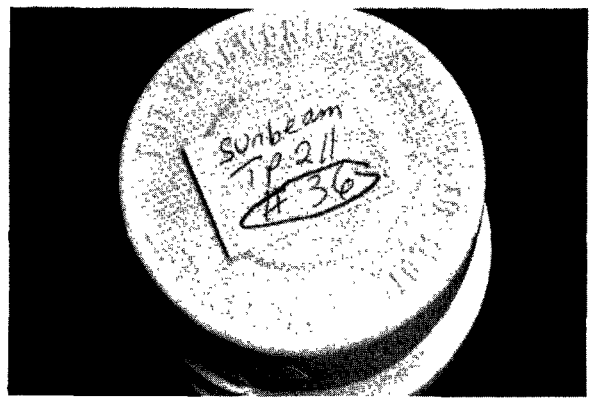
MANUFACTURER	MODEL	ASTM
Sunbeam Plastics Corporation	**Tamperproof Child-Resistant Aerosol TP 211 (Aerosol Overcap)**	**VII D**

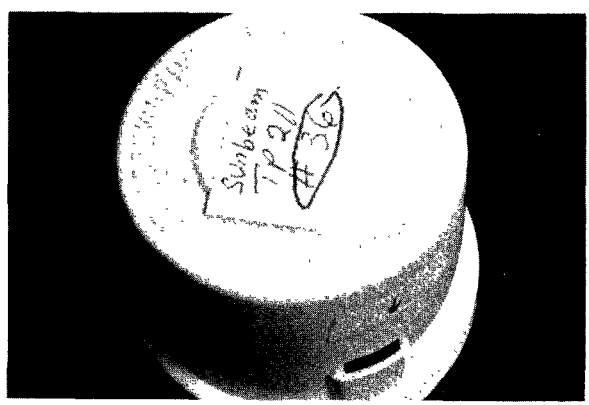
DESCRIPTION

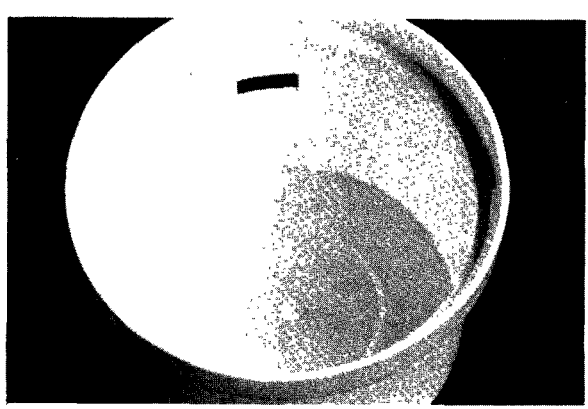
This is a one piece plastic aerosol overcap which requires the use of a device to open. The overcap is removed by pushing up on a tool that fits into a slot on the side of the cap (see arrow in photograph) and touching the aerosol can mounting cup.

The inside of the overcap has three evenly spaced ridges below the slot (at the bottom of the cap) which locks it onto the can chime (bottom rim) and this is released only by the tool lifting the cap up/pushing the mounting cup down.

The instructions are: Put screwdriver fully into slot, Lift handle







MANUFACTURER	MODEL	ASTM
Gravure Flex Packaging Corporation	**Create-A-Tab (JB 1108)**	**VIII D**

DESCRIPTION

This package is a semi-rigid blister nonreclosable package. The package is opened by folding down a corner of the package toward the blister, peeling back on the white paper tab (created by fold) and pushing the tablet/capsule/product out through the foil layer (see photograph). The package consists of paper-polyester-foil layers heat sealed to a blister.

JB-1108 is the foil laminate layer attached to the blister.

MANUFACTURER	MODEL	ASTM
Ethyl Corporation	**0176 CR Trigger Sprayer**	**IX B (1)**

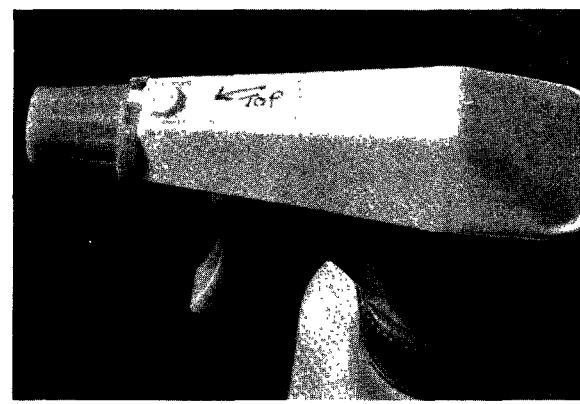
DESCRIPTION

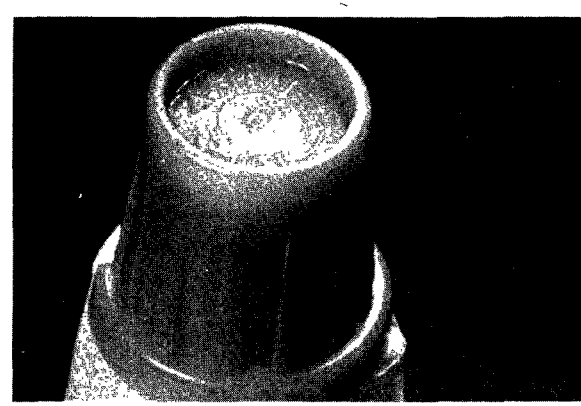
The package consists of a one piece plastic continuously threaded closure and a plastic trigger pump attached to a container. The closure is permanently affixed to the container by means of continuous threading and rachets on both pieces (see photograph). Two sets of rachets are on the container neck and continuous rachets are around the closure interior. The trigger pump in the center of the closure is activated by: (1) pushing on the dot on the top of the sprayer, the dot has a tab connected to it; (2) simultaneously rotating the nozzle on the sprayer front counterclockwise such that the tab-dot no longer fits into the nozzle groove (see photograph); (3) then squeezing the trigger.

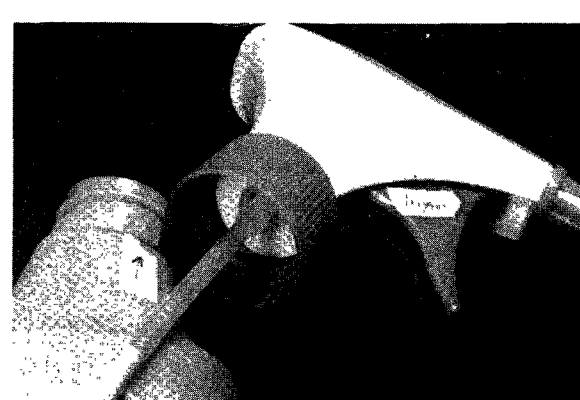
The instructions on the sprayer nozzle are:

Spray

Off







U.S. GOVERNMENT PRINTING OFFICE : 1985 O - 486-063 : QL 3