

# INCAP

INFUSION CAP TECHNOLOGY



**THE NEW CONSUMER MINDSET:**

*“Not long ago, consumers chose a beverage simply to quench their thirst, now they choose beverages to make themselves thinner, stronger, healthier, more athletic, younger looking, and to even ward off cancer. The ante has definitely been raised.”*

– Beverage News

## Design Considerations

*INCAP has implemented a push to activate technique which is far more intuitive than the turn to activate technique.*

*Solid membrane seals provide product integrity and function.*

*The INCAP is a simple 2 part assembly with minimum points of potential failure ensuring absolute OTR & WVT barrier.*

*The ease of use aspect of this design received extensive consideration and has been user tested by subjects of several languages and ethnic background.*

*There are no removable parts like activation tear bands or over caps that can become litter and the INCAP is 100% recyclable.*

*INCAP is in our opinion the most aesthetically appealing product to date and easily integrated into existing bottling systems.*

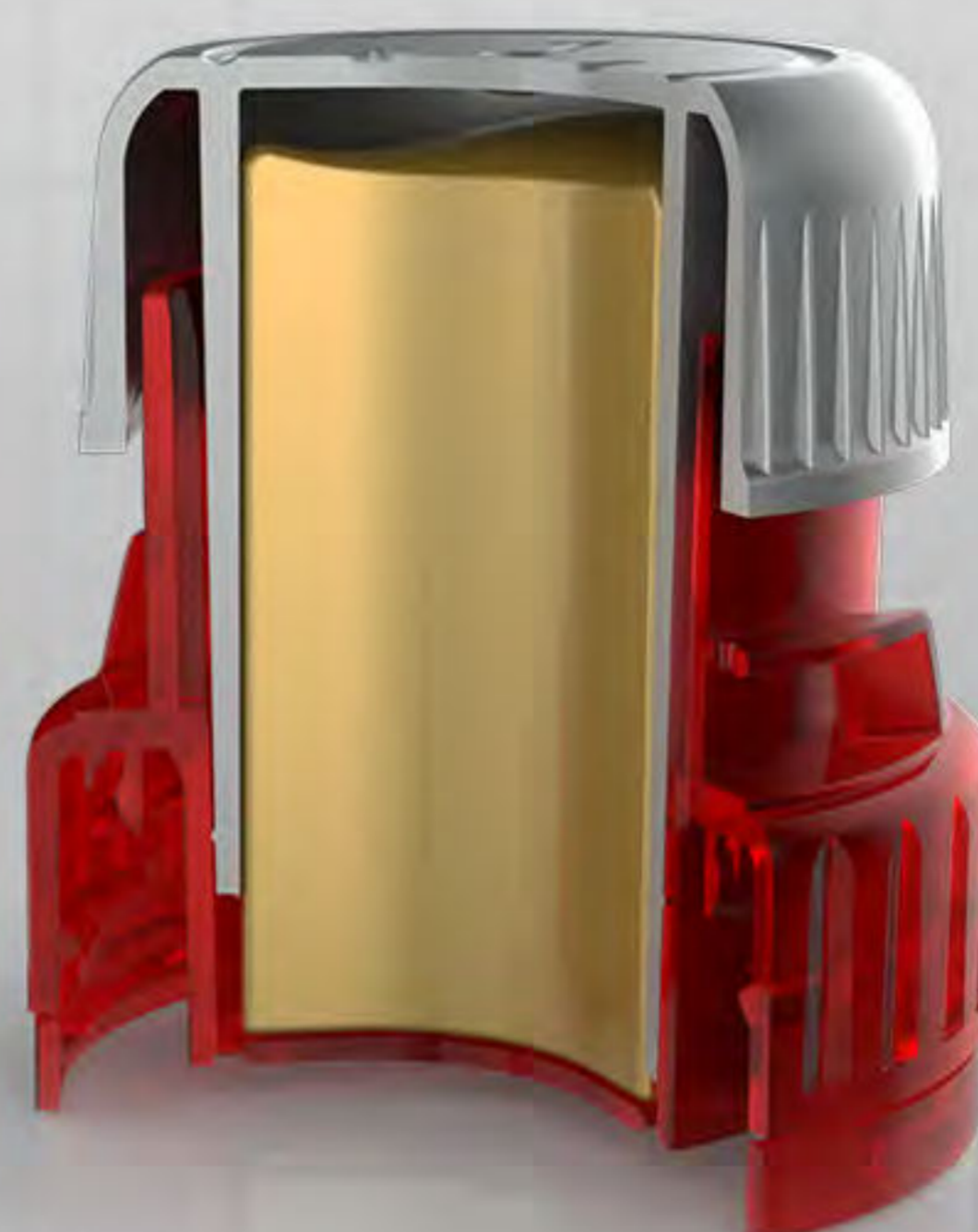


28mm



38mm

*Liquid or Powder,  
capacity 7,5 ml / 12 ml*



section view



*INCAP is a 2 part design manufactured in Polypropylene. Colors can be mixed and matched between the two parts.*

*Seal swings open to good angle during activation.*



*Intuitive instructions to ensure ease of use in any language.*

*Tamper evidence band separates from base section when removed from bottle.*



*Simple to  
operate ...*



**STEP  
01**

***Locked***



***Turn to  
unlock***

**STEP  
02**



***Press to  
activate***

## *Thread Specifications*

*INCAP is developing several versions of infusion caps including:*

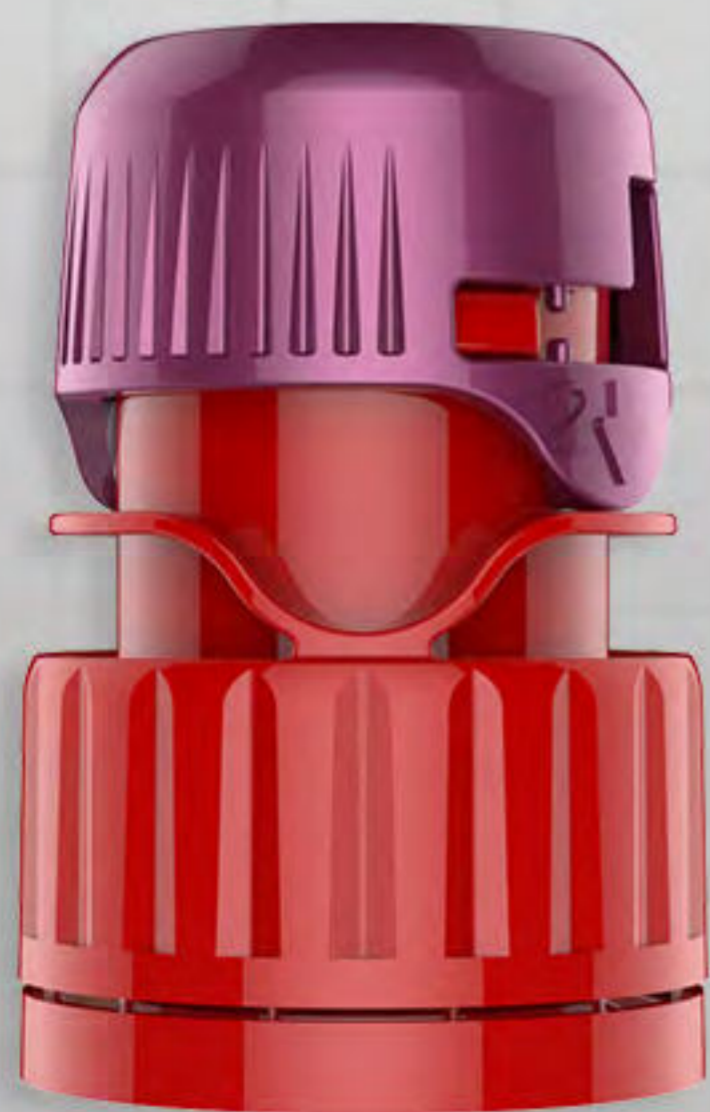
- 28mm removable (available now)*
- 38mm removable (available now)*
- 38mm drink through Sports Cap (2016)*
- 50mm bulk volume (Protein powders/Baby Formula) (2016)*
- Customized cap & container cocktail package (2016)*
- Custom cap for Chemical Applications (per customer spec.)*

*The first version that is now available is based upon a single start 28mm and three start 38mm standard including:*

*PCO 1810/1815/1823/1820/1817/1816 & ALC1716*



*Choose your favorite color...*



## *As a result of consumer demand*

*Beverage companies are aggressively working on improving the nutritional qualities of their beverages as ALL vitamins, many minerals and most nutraceuticals lose their potency within hours of being bottled.*

*The current \$15 billion market for “Vitamin” drinks constitute what is likely the greatest fraud against consumers in modern day ready-to-drink beverage industry history. As evidence, there are a number of legal actions against well known beverage companies for misleading product benefits.*

*In liquid form, any formula will need to be protected with chemical preservatives and stabilizers to provide shelf life, which hardly meets the needs for the health conscious consumer. Some beverage companies have added extra nutrients and preservatives, but in reality the consumer ends up with extra chemicals and no nutritional value whatsoever.*

*INCAP’s Patent Pending design eliminates these problems by protecting the potency of nutraceuticals in the cap, releasing them into water just prior to consumption.*

*The result is a new beverage category that delivers the worlds most potent drinks EVER!!*



## *Flexibility & higher margins*

### *A NEW WAY TO SELL YOUR PRODUCTS:*

*Companies have a brand new delivery system for their medicine/pharmaceuticals.*

*INCAP can be sold on profitable single-serve bottles or in multi-cap blister packs with an empty branded bottle.*

### *HIGHER PROFIT MARGINS:*

*Studies confirm consumers will pay extra for convenience and that is especially true for health-related products. Think of the sales opportunity. For example, instead of selling a bottle of low margin tablets or pills, you can sell the ingredients in INCAP, resulting in a far higher profit margin, while expanding your customer base thanks to the convenient and exciting new packaging.*

### *BRANDING:*

*Branded bottles with the INCAP look great and truly stand out, especially when compared to everything else on the ho-hum pharmaceutical shelves.*



## *Energy & waste saving*

*INCAP eliminating the need for 'hot fill' sterilization in most beverage industry applications.*

*This results in reduced energy consumption during bottling and allowing the use of lighter (thin walled) plastic bottles, reducing waste by up to 45%*



*Standard Hot Fill  
500ml Bottle*

**43**  
**GRAMS**

*INCAP equipped  
500ml Bottle*

**24**  
**GRAMS**

*If it's already mixed it's not fresh.*



## *Pharmaceutical company's are moving with this technology*

*NO PILL-SWALLOWING PROBLEM: 40% of adults and a higher percentage of children have trouble swallowing pills. With INCAP, there are never any pills to swallow. There is just an easy-to-drink liquid.*

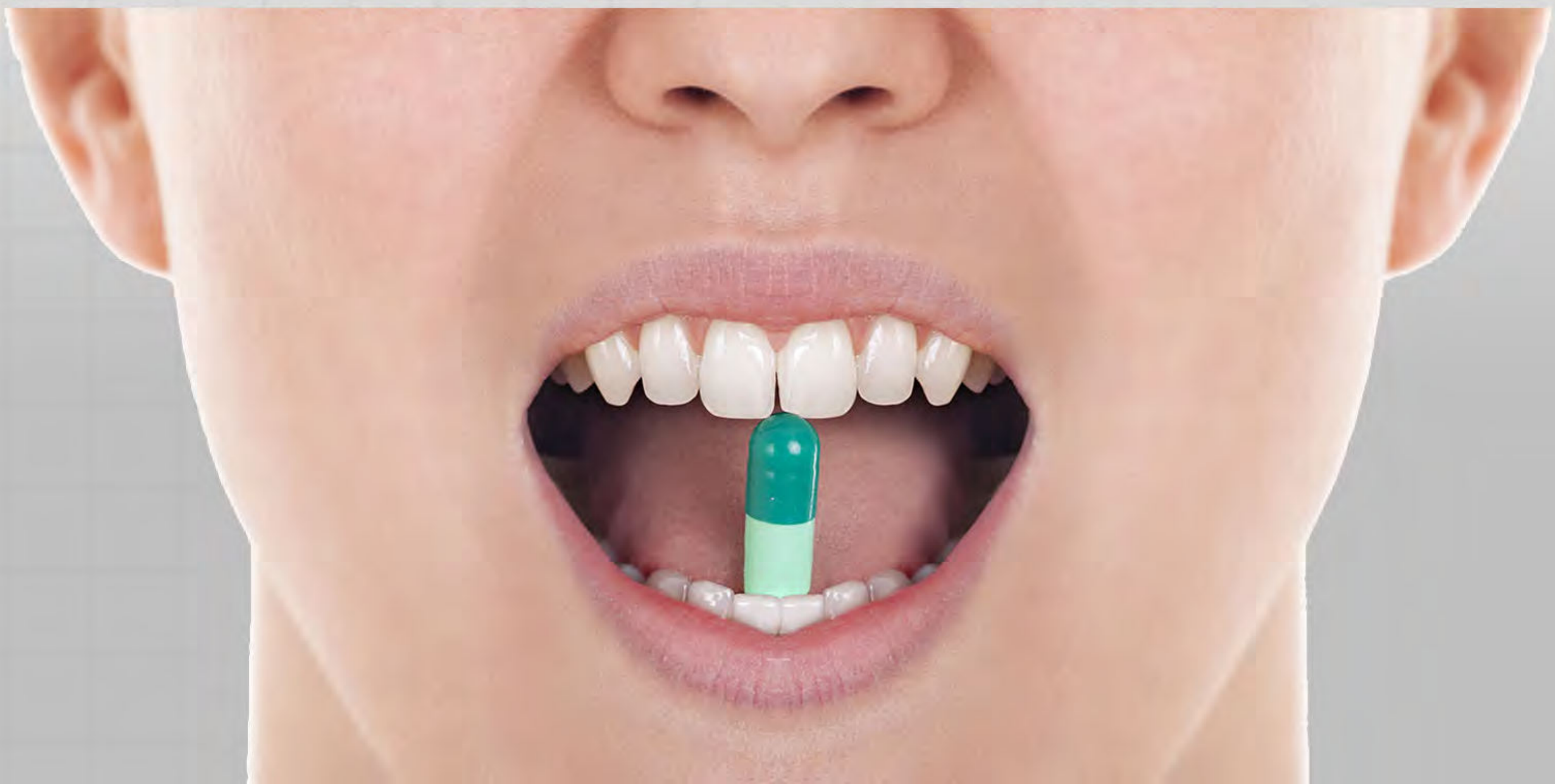
*DOSE ACCURACY: Since a precise amount of medicine is stored in the tamper-proof INCAP, consumers know they're getting exactly the recommended dose. Which is great news for seniors who have trouble reading labels or measuring the correct dosages.*

*STOMACH BUFFER: Most people wash down their pills with just a small mouthful of liquid, which results in problems like pills getting stuck on the way down, and stomach irritation. With INCAP, since there is a drink instead of pills, those problems are eliminated.*

*CONVENIENCE: For the first time consumers can purchase single servings of medicine/pharmaceuticals in a ready-to-drink form. Just push down the plunger for great tasting liquid addressing a specific health need.*

*TASTE: Most medicines taste awful, really awful. But with the INCAP, you can create flavors consumers will actually enjoy.*

*FUN: How many children say taking medicine is "fun"? The answer is, none. But the interactive INCAP actually is fun. Unlock the cap, smack down the plunger and you have medicine you can drink without yelling "Yuck!"*



*Better drink with added fun*

*Watch customer  
squeal with delight  
as they add power to  
their drink*



## *Independent test data from Guelph verifies INCAP meets/ exceeds expectations.*

*Over the past 16 months we have focused upon ensuring that INCAP fits perfectly to PET bottles, is robust enough for transportation logistics, is functional, integrates seamlessly into beverage production systems, is intuitive to operate and looks great.*

*To gauge our progress we sent product for evaluation to Guelph Food Technology Corporation who are an independent testing facility. These tests show:*

*No change in elevated temperature test*

*No damage in impact tests*

*No damage in drop tests*

***NOTE: INCAP eliminates Hot Fill process and not designed for carbonated applications, but we still tested the cap for these and it passed both to industry requirements.***

*No deformation in hot fill process @ 95°C*

*Robust to 5.5 Bars of carbonation pressure (most soft drinks are between 3-4 Bars)*

*Meets target activation force (that is adjustable with material additives by > 50%)*

*From this data we can now confidently sell the 28mm INCAP into our target industries including beverage and pharmaceutical applications.*



Results of independent tests performed by:



Test: Elevated Temperature Cycle  
Project Number: PKG 939 (9158628)

Temperature Cycling Effects

Sample Nr.	Day 1	Day 2	Day 3
1	No Damage/Leaks	No Damage/Leaks	No Damage/Leaks
2	No Damage/Leaks	No Damage/Leaks	No Damage/Leaks
3	No Damage/Leaks	No Damage/Leaks	No Damage/Leaks

Total Number of Occurrences: 0



Test: *Ball Impact*

Project Number: *PKG 939 (9158628)*

Temperature: *4°C (40F)*

<i>S.Nr.</i>	<i>90 to top center</i>	<i>90 to top edge</i>	<i>45 angle to top edge</i>	<i>90 to sidewall</i>
<i>1</i>	<i>No Damage</i>	<i>No Damage</i>	<i>No Damage</i>	<i>No Damage</i>
<i>2</i>	<i>No Damage</i>	<i>No Damage</i>	<i>No Damage</i>	<i>No Damage</i>
<i>3</i>	<i>No Damage</i>	<i>No Damage</i>	<i>No Damage</i>	<i>No Damage</i>

Test: *Drop Test*

Project Number: *PKG 939 (9158628)*

Temperature: *4°C (40F)*

<i>Sample Nr.</i>	<i>Side Impact</i>	<i>Base Impact</i>
<i>1</i>	<i>No Damage</i>	<i>No Damage</i>
<i>2</i>	<i>No Damage</i>	<i>No Damage</i>
<i>3</i>	<i>No Damage</i>	<i>No Damage</i>

Test: Hot Fill Performance

Project Number: PKG 939 (9158628)

*Hot Fill at 85 degrees Celsius*

<i>Sample Number</i>	<i>Hot Fill Performance</i>
1	<i>No deformation of closure after hot fill</i>
2	<i>No deformation of closure after hot fill</i>
3	<i>No deformation of closure after hot fill</i>

*Hot Fill at 90 degrees Celsius*

<i>Sample Number</i>	<i>Hot Fill Performance</i>
1	<i>No deformation of closure after hot fill</i>
2	<i>No deformation of closure after hot fill</i>
3	<i>No deformation of closure after hot fill</i>

*Hot Fill at 95 degrees Celsius*

<i>Sample Number</i>	<i>Hot Fill Performance</i>
1	<i>No deformation of closure after hot fill</i>
2	<i>No deformation of closure after hot fill</i>
3	<i>No deformation of closure after hot fill</i>

*Test: Performance of Activated Closures Under Pressure*

*Project Number: PKG 939 (9158628)*

*Closure under 2 Bars of Pressure / Sparkling Water level*

<i>Sample Number</i>	<i>Closure Performance</i>
<i>1</i>	<i>Plunger stayed in place</i>
<i>2</i>	<i>Plunger stayed in place</i>
<i>3</i>	<i>Plunger stayed in place</i>

*Closure under 4 Bars of Pressure / Coke & Beer product level*

<i>Sample Number</i>	<i>Activation Force (lbs)</i>
<i>1</i>	<i>Plunger stayed in place</i>
<i>2</i>	<i>Plunger stayed in place</i>
<i>3</i>	<i>Plunger stayed in place</i>

*Closure under 6 Bars of Pressure / Not normal - possibly dangerous*

<i>Sample Number</i>	<i>Activation Force (lbs)</i>
<i>1</i>	<i>Plunger rose up and released from closure</i>
<i>2</i>	<i>Plunger rose up and released from closure</i>
<i>3</i>	<i>Plunger rose up and released from closure</i>

Test: Secure Seal

Project Number: PKG 939 (9158628)

<i>Sample Number</i>	<i>Pressure at Which an Activated Plunger Released (psi)</i>
1	80
2	85
3	75
<i>Average</i>	80 (5,5 Bars)



Test: Topload Vent (Activation Force)

Project Number: PKG 939 (9158628)

Activation at 4 degrees Celsius

Sample Number	Activation Force (lbs)
1	78
2	76
3	88
Average	81

Activation at 23 degrees Celsius

Sample Number	Activation Force (lbs)
1	72
2	71
3	78
Average	74

Activation at 38 degrees Celsius

Sample Number	Activation Force (lbs)
1	55
2	57
3	50
Average	54



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