

Evaluation of the
28mm SAF-CAP III-A ON AN
HDPE RECTANGULAR BOTTLE
For Senior-Resecuring Effectiveness
For Van Blarcom Closures, Inc.



TESTING
NO. 1457

January 13, 2000

Vince Scuderi
Van Blarcom Closures, Inc.
156 Sanford Street
Brooklyn, NY 11205

Dear Mr. Scuderi,

Herein is our report titled "Evaluation of the 28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE for Senior-Resecuring Effectiveness for Van Blarcom Closures, Inc."

The test unit was evaluated using the Consumer Product Safety Commission Protocol and Standards. The study indicates the test unit fulfills the requirements senior-resecuring effectiveness as per the current Code of Federal Regulations (C.F.R.) Title 16, Part 1700.

After you have had an opportunity to read the report, I shall be pleased to review it with you.

Sincerely,
PERRITT LABORATORIES, INC.

A handwritten signature in black ink, appearing to read 'Richard A. Ward', is written over the typed name.

Richard A. Ward
Director of Consumer Product Testing

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I. SUMMARY

Report to: Vince Scuderi
Van Blarcom Closures, Inc.
156 Sanford Street
Brooklyn, NY 11205
Date: January 13, 2000
Samples of: 28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE
Contract No.: 1271-032
Samples Received: December 2, 1999
Submitted by: Vince Scuderi

Objective

The client submitted the above sample for a study to determine if the unit is in compliance with the Consumer Product Safety Commission's (CPSC) current protocol and standards for senior-resecuring effectiveness as per the Code of Federal Regulations (C.F.R.) Title 16, Part 1700.

Procedures

The protocol for the evaluation of packaging for poison prevention (current C.F.R. Title 16, Part 1700) was strictly adhered to for this study.

Panelists

In the course of this study and 100 seniors (50 to 70 year-olds, 70% female) were employed. An additional 100 children (42 to 51 months of age) were employed to test the packages that the seniors reclosed. This study does not include a 50 child sequential test panel for child-resistant effectiveness, though their inclusion is stipulated in the regulation.

Results

Results of the study indicate that the **28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE** fulfills the standards for senior-resecuring effectiveness according to current C.F.R. Title 16, Part 1700.

II. INTRODUCTION

Van Blarcom Closures, Inc. wished to determine if the 28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE fulfills the Consumer Product Safety Commission's (CPSC) current standards and protocols for senior-resecuring effectiveness set forth in the Code of Federal Regulations Title 16, Part 1700. Perritt Laboratories, Inc., a UKAS accredited laboratory¹ for testing child-resistant packaging according to the CPSC protocol, was requested to evaluate the packaging using the above protocol.

Perritt Laboratories is an independent testing laboratory and has been evaluating child-resistant packaging for both industry and government for over twenty five years. The company is recognized as the leader in the field by virtue of having employed hundreds of thousands of panelists and evaluated thousands of packaging concepts for child-resistance. Perritt Laboratories, Inc. utilizes standard operating procedures (SOP's), along with quality assurance programs in accordance with good laboratory practices (GLP) for non-clinical laboratories.

In the course of this evaluation, the packaging was tested with panels consisting of 100 seniors (50 to 70 year-olds, 70% female) and 100 children (42 to 51 months of age, evenly distributed) obtained from nursery schools, day care centers and civic groups. The data derived from the study were assembled in a meaningful fashion and reviewed to determine whether the packaging met the cited standards for senior-resecuring effectiveness presented herein.

¹Perritt Laboratories, Inc. holds NAMAS accreditation (#1457) from the United Kingdom Accreditation Service (UKAS) for testing packaging for child-resistance according to the Consumer Product Safety Commission's current protocols and standards set forth in the Code of Federal Regulations Title 16, Part 1700.

Organizations accredited by UKAS meet the requirements of EN 45001, ISO Guide 25 and the relevant requirements of the ISO 9000/EN 29000/BS 5750 series of standards, including those of the model described in ISO 9002/EN 29002/BS 5750 Part 2 when acting as suppliers producing test results.

III. PROCEDURE

The following standard and protocol was adhered to in this study.

Protocol

Code of Federal Regulations Title 16, Part 1700:

1700.20 Testing procedure for testing special packaging.

(a) Test protocols - (1) General requirements - (i) Requirements for packaging. As specified in §1700.15(b), special packaging is required to meet the child test requirements and the applicable adult test requirements of this §1700.20.

(ii) Condition of packages to be tested. (A) Tamper-resistant feature. Any tamper-resistant feature of the package to be tested shall be removed prior to testing unless it is part of the package's child-resistant design. Where a package is supplied to the consumer in an outer package that is not part of the package's child-resistant design, one of the following situations applies.

(1) In the child test, the package is removed from the outer package, and the outer package is not given to the child.

(2) In both the adult tests, if the outer package bears instructions for how to open or properly resecure the package, the package shall be given to the test subject in the outer package. The time required to remove the package from the outer packages is not counted in the times allowed for attempting to open and, if appropriate, reclose the package.

(3) In both the adult tests, if the outer package does not bear any instructions relevant to the test, the package will be removed from the outer package, and the outer package is not given to the test subject.

(B) Reclosable packages - adult tests. In both the adult tests, reclosable packages, if assembled by the testing agency, shall be properly secured at least 72 hours prior to beginning the test to allow the materials (e.g., the closure liner) to "take a set." If assembled by the testing agency, torque-dependent closures shall be secured at the same on-torque as applied on the packaging line. Application torques must be recorded in the test report. All packages shall be handled so that no damage or jarring will occur during storage or transportation. The packages shall not be exposed to extreme conditions of heat or cold. The packages shall be tested at room temperature.

(2) Child test - (i) Test subjects. (A) Selection criteria. Use from 1 to 4 groups of 50 children, as required under the sequential testing criteria in Table 1. No more than 20 percent of the children in each group shall be tested at or obtained from any given site. Each group of children shall be randomly selected as to age, subject to the limitations set forth below. Thirty percent of the children in each group shall be of age 42-44 months, 40 percent of the children in each group shall be of age 45-48 months, and 30 percent of

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the children in each group shall be of age 49-51 months. The children's ages shall be calculated as follows:

(1) Arrange the birth date and test date by the numerical designations for month, day, and year.

(2) Subtract the month, day, year numbers for the birth date from the respective numbers for the test date. This may result in negative numbers for the months or days.

(3) Multiply the difference in years by 12 to obtain the number of months in the difference in years, and add this value to the number of months that was obtained when the birth date was subtracted from the test date. This figure either will remain the same or be adjusted up or down by 1 month, depending on the number of days obtained in the subtraction of the birth date from the test date.

(4) If the number of days obtained by subtracting the days in the birth date from the days in the test date is +16 or more, 1 month is added to the number of months obtained above. If the number of days is -16 or less, subtract 1 month. If the number of days is between -15 and +15 inclusive, no change is made in the number of months.

(B) Gender distribution. The difference between the number of boys and the number of girls in each age range shall not exceed 10 percent of the number of children in that range. The children selected should have no obvious or overt physical or mental handicap. Each child's parent or guardian shall read and sign a consent form prior to the child's participation. (The Commission staff will not disregard the results of tests performed by other parties simply because informed consent for children is not obtained.)

(ii) Test failures. A test failure shall be any child who opens the special packaging or gains access to its contents. In the case of unit packaging, however, a test failure shall be any child who opens or gains access to the number of individual units which constitute the amount that may produce serious personal injury or serious illness, or a child who opens or gains access to more than 8 individual units, whichever number is lower, during the full 10 minutes of testing. The number of units a child opens or gains access to is interpreted as the individual units from which the product has been or can be removed in whole or in part. The determination of the amount of substance that may produce serious personal injury or serious illness shall be based on a 25-pound child. Manufacturers or packagers intending to use unit packaging for a substance requiring special packaging are requested to submit such toxicological data to the Commission's Office of Compliance.

Table 1. Number of Openings: Acceptance (Pass), Continue Testing, and Rejection (Fail) Criteria for the First 5 minutes and the Full 10 minutes of the Children's Protocol Test

Test Panel	Cumulative number of children	Package Openings					
		First 5 minutes			Full 10 minutes		
		Pass	Continue	Fail	Pass	Continue	Fail
1....	50	0 - 3	4 - 10	11+	0 - 5	6 - 14	15+
2....	100	4 - 10	11 - 18	19+	6 - 15	16 - 24	25+
3....	150	11 - 18	19 - 25	26+	16 - 25	26 - 34	35+
4....	200	19 - 30	31+	26 - 40	41+

(iii) Sequential test. The sequential test is initially conducted using 50 children, and, depending on the results, the criteria in Table 1 determine whether the package is either child-resistant or not child-resistant or whether further testing is required. Further testing is required if the results are inconclusive and involves the use of one or more additional groups of 50 children each, up to a maximum of 200 children. No individual shall administer the test to more than 30 percent of the children tested in each group. Table 1 gives the acceptance (pass), continue testing, and rejection (fail) criteria to be used for the first 5 minutes and the full 10 minutes of the children's test. If the test continues past the initial 50-child panel, the package openings shown in Table 1 are cumulative.

(iv) Test procedures. The children shall be divided into groups of two. The testing shall be done in a location that is familiar to the children; for example, their customary nursery school or regular kindergarten. No child shall test more than two special packages. When more than one special package is being tested, each package shall be of a different ASTM type and they shall be presented to the paired children in random order. This order shall be recorded. The children shall be tested by the procedure incorporated in the following test instructions:

Standardized Child Test Instructions

1. Reclosable packages, if assembled by the testing agency, shall be properly secured at least 72 hours prior to the opening described in instruction number 3 to allow the materials, (e.g. the closure liner), to "take a set." Application torques must be recorded in the test report.

2. All packages shall be handled so that no damage or jarring will occur during storage or transportation. The packages shall not be exposed to extreme conditions of heat or cold. The packages shall be tested at room temperature.

3. Reclosable packages shall be opened and properly resecured one time (or more if appropriate), by the testing agency or other adult prior to testing. The opening and resecuring shall not be done in the presence of the children. (In the adult-resecuring test, the tester must not open and resecure the package prior to the test.) If multiple openings/resecurings are to be used, each of four (4) testers shall open and properly resecure one fourth of the packages once and then shall open and properly resecure each

package a second, third, fourth, through tenth (or other specified number) time, in the same sequence as the first opening and resealing. The packages shall not be opened and resealed again prior to testing. The name of each tester and the package numbers that he/she opens and reseals shall be recorded and reported. It is not necessary for the tester to protocol test the packages that they opened and resealed.

4. The child shall have no overt physical or mental handicaps. No child with a permanent or temporary illness, injury, or handicap that would interfere with his/her effective participation shall be included in the test.

5. The testing shall take place in a well-lighted location that is familiar to the children and that is isolated from all distractions.

6. The tester, or another adult, shall escort a pair of children to the test area. The tester shall seat the two children so that there is no visual barrier between the children and the tester.

7. The tester shall talk to the children to make them feel at ease.

8. The children shall not be given the impression that they are in a race or contest. They are not to be told that the test is a game or that it is fun. They are not to be offered a reward.

9. The tester shall record all data prior to, or after, the test so that full attention can be on the children during the test period.

10. The tester shall use a stopwatch(s) or other timing device to time the number of seconds it takes the child to open the package and to time the 5-minute test periods.

11. To begin the test, the tester shall hand the children identical packages and say, "PLEASE TRY TO OPEN THIS FOR ME."

12. If a child refuses to participate after the test has started, the tester shall reassure the child and gently encourage the child to try. If the child continues to refuse, the tester shall ask the child to hold the package in his/her lap until the other child is finished. This pair of children shall not be eliminated from the results unless the refusing child disrupts the participation of the other child.

13. Each child shall be given up to 5 minutes to open his/her package. The tester shall watch the children at all times during the test. The tester shall minimize conversations with the children as long as they continue to attempt to open their packages. The tester shall not discourage the children verbally or with facial expressions. If a child gets frustrated or bored and stops trying to open his/her package, the tester shall reassure the child and gently encourage the child to keep trying (e.g., "please try to open the package").

14. The children shall be allowed freedom of movement to work on their packages as long as the tester can watch both children (e.g., they can stand up, get down on the floor, or bang or pry the package).

15. If a child is endangering himself or others at any time, the test shall be stopped and the pair of children eliminated from the final results.

16. The children shall be allowed to talk to each other about opening the packages and shall be allowed to watch each other try to open the packages.

17. A child shall not be allowed to try to open the other child's package.

18. If a child opens his/her package, the tester shall say, "THANK YOU," take the package from the child and put it out of the child's reach. The child shall not be asked to open the package a second time.

19. At the end of the 5-minute period, the tester shall demonstrate how to open the package if either child has not opened his or her package. A separate "demo" package shall be used for the demonstration.

20. Prior to beginning the demonstration, the tester shall ask the children to set their packages aside. The children shall not be allowed to continue to try to open their packages during the demonstration period.

21. The tester shall say, "WATCH ME OPEN MY PACKAGE."

22. Once the tester gets the children's full attention, the tester shall hold the demo package approximately two feet from the children and open the package at a normal speed as if the tester were going to use the contents. There shall be no exaggerated opening movements.

23. The tester shall not discuss or describe how to open the package.

24. To begin the second 5-minute period, the tester shall say, "NOW YOU TRY TO OPEN YOUR PACKAGES."

25. If one or both children have not used their teeth to try to open their packages during the first 5 minutes, the tester shall say immediately before beginning the second 5-minute period, "YOU CAN USE YOUR TEETH IF YOU WANT TO." This is the only statement that the tester shall make about using teeth.

26. The test shall continue for an additional 5 minutes or until both children have opened their packages, whichever comes first.

27. At the end of the test period, the tester shall say, "THANK YOU FOR HELPING." If children were told that they could use their teeth, the tester shall say, "I KNOW I TOLD YOU THAT YOU COULD USE YOUR TEETH TODAY, BUT YOU SHOULD NOT PUT THINGS LIKE THIS IN YOUR MOUTH AGAIN." In addition, the tester shall say, "NEVER OPEN PACKAGES LIKE THIS WHEN YOU ARE BY YOURSELF. THIS KIND OF PACKAGE MIGHT HAVE SOMETHING IN IT THAT WOULD MAKE YOU SICK."

28. The children shall be escorted back to their classroom or other supervised area by the tester or another adult.

29. If the children are to participate in a second test, the tester shall have them stand up and stretch for a short time before beginning the second test. The tester shall take care that the children do not disrupt other tests in progress.

(3) Senior-adult panel - (i) Test subjects. Use a group of 100 senior adults. Not more than 24 percent of the senior adults tested shall be obtained from or tested at any one site. Each group of senior adults shall be randomly selected as to age, subject to the limitations set forth below. Twenty-five percent of the participants shall be 50-54 years of age, 25% of participants shall be 55-59 years of age, and 50% of the participants shall be 60-70 years old. Seventy percent of the participants of ages 50-59 and ages 60-70

shall be female (17 or 18 females shall be apportioned to the 50-54 year age group). No individual tester shall administer the test to more than 35% of the senior adults tested. The adults selected should have no obvious or overt physical or mental disability.

(ii) Screening procedures. Participants who are unable to open the packaging being tested in the first 5-minute time period, are given a screening test. The screening tests for this purpose shall use two packages with conventional (not child-resistant (CR) or "special") closures. One closure shall be a plastic snap closure and the other a continuous threaded (CT) plastic closure. Each closure shall have a diameter of 28 mm \pm 18%, and the CT closures shall have been resecured 72 hours before testing at 10 inch-pounds of torque. The containers for both the snap- and CT-type closures shall be round plastic containers, in sizes of 2 ounce \pm 1/2 ounce for the CT-type closure and 8 drams \pm 4 drams for the snap-type closure. Persons who cannot open and close both of the screening packages in 1-minute screening tests shall not be counted as participants in the senior-adult panel.

(iii) SAUE. The senior adult use effectiveness (SAUE) is the percentage of adults who both opened the package in the first (5-minute) test period and opened and (if appropriate) properly resecured the package in the 1-minute test period.

(iv) Test procedures. The senior adults shall be tested individually, rather than in groups of two or more. The senior adults shall receive only such printed instructions on how to open and properly secure the special packaging as will appear on or accompany the package as it is delivered to the consumer. The senior-adult panel is tested according to the procedure incorporated in the following senior-adult panel test instructions:

Test Instructions for Senior Test

The following test instructions are used for all senior tests. If non-reclosable packages are being tested, the commands to close the package are eliminated.

1. No adult with a permanent or temporary illness, injury, or disability which would interfere with his/her effective participation shall be included in the test.

2. Each adult shall read and sign a consent form prior to participating. Any appropriate language from the consent form may be used to recruit potential participants. The form shall include the basic elements of informed consent as defined in 16 CFR 1028.116. Before beginning the test, the tester shall say, "PLEASE READ AND SIGN THIS CONSENT FORM." If an adult cannot read the consent form for any reason (forgot glasses, illiterate, etc.), he/she shall not participate in the test.

3. Each adult shall participate individually and not in the presence of other participants or onlookers.

4. The tests shall be conducted in well-lighted and distraction-free areas.

5. Records shall be filled in before or after the test, so that the tester's full attention is on the participant during the test period. Recording the test times to open and resecure the packages are the only exceptions.

6. To begin the first 5-minute test period, the tester says, "I AM GOING TO ASK YOU

TO OPEN AND PROPERLY CLOSE THESE TWO IDENTICAL PACKAGES ACCORDING TO THE INSTRUCTIONS FOUND ON THE CAP." (Specify other instruction locations if appropriate.)

7. The first package is handed to the participant by the tester, who says, "PLEASE OPEN THIS PACKAGE ACCORDING THE DIRECTIONS OF THE CAP." (Specify other instruction locations if appropriate.) If the package contains product, the tester shall say, "PLEASE EMPTY THE (PILLS, TABLETS, CONTENTS, ETC.) INTO THIS CONTAINER." After the participant opens the package, the tester says, "PLEASE CLOSE THE PACKAGE PROPERLY, ACCORDING TO THE INSTRUCTIONS OF THE CAP." (Specify other instruction locations if appropriate)

8. Participants are allowed up to 5 minutes to read the instructions and open and close the package. The tester uses a stopwatch(s) or other timing device to time the opening and resealing times. The elapsed times in seconds to open the package and to close the package are recorded on the data sheet as two separate times.

9. After 5 minutes, or when the participant has opened and closed the package, whichever comes first, the tester shall take all test materials from the participant. The participant may remove and replace the closure more than once if the participant initiates these actions. If the participant does not open the package and stops trying to open it before the end of the 5-minute period, the tester shall say, "ARE YOU FINISHED WITH THAT PACKAGE, OR WOULD YOU LIKE TO TRY AGAIN?" If the participant indicates that he/she is finished or cannot open the package and does not wish to continue trying, skip to Instruction 13.

10. To begin the second test period, the tester shall give the participant another, but identical, package and say, "THIS IS AN IDENTICAL PACKAGE. PLEASE OPEN IT ACCORDING TO THE INSTRUCTIONS ON THE CAP." (Specify other instruction locations if appropriate.) If the package contains product, the tester shall say, "PLEASE EMPTY THE (PILLS, TABLETS, CONTENTS, ETC.) INTO THIS CONTAINER." After the participant opens the package, the tester says, "PLEASE CLOSE THIS PACKAGE PROPERLY, ACCORDING TO THE INSTRUCTIONS ON THE CAP." (Specify other instruction locations if appropriate.)

11. The participants are allowed up to 1 minute (60 full seconds) to open and close the package. The elapsed times in seconds to open and to close the package are recorded on the data sheet as two separate times. The time that elapses between the opening of the package and the end of the instruction to close the package is not counted as part of the 1-minute test time.

12. After the 1-minute test, or when the participant has opened and closed the package, whichever comes first, the tester shall take all the test materials from the participant. The participant shall not be allowed to handle the package again. If the participant does not open the package and stops trying to open it before the end of the 1-minute period, the tester shall say, "ARE YOU FINISHED WITH THAT PACKAGE, OR WOULD YOU LIKE TO TRY AGAIN?" If the participant indicates that he/she is finished or cannot open the package and does not wish to continue trying, this shall be counted as a failure of the 1-minute test.

13. Participants who do not open the package in the first 5-minute test period are

asked to open and close two non-child-resistant screening packages. The participants are given a 1-minute test period for each package. The tester shall give the participant a package and say, "PLEASE OPEN AND PROPERLY CLOSE THIS PACKAGE." The tester records the time for opening and closing, or 61 seconds, whichever is less, on the data sheet. The tester then gives the participant the second package and says, "PLEASE OPEN AND PROPERLY CLOSE THIS PACKAGE." The times to open and resecure or 61 seconds, whichever is less, shall be recorded on the data sheet.

14. Participants who cannot open and resecure both of the non-child-resistant screening packages are not counted as part of the 100-senior panel. Additional participants are selected and tested.

15. No adult may participate in more than two tests per sitting. If a person participates in two tests, the packages tested shall not be the same ASTM type of package.

16. If more adults in a sex or age group are tested than are necessary to determine SAUE, the last person(s) tested shall be eliminated from that group.

(4) Younger-adult panel. (i) One hundred adults, age 18 to 45 inclusive, with no overt physical or mental handicaps, and 70 percent of whom are female, shall comprise the test panel for younger adults. Not more than 35% of adults shall be obtained or tested at any one site. No individual tester shall administer the test to more than 35% of the adults tested. The adults shall be tested individually, rather than in groups of two or more. The adults shall receive only such printed instructions on how to open and properly resecure the special packaging as will appear on the package as it is delivered to the consumer. Five minutes shall be allowed to complete the opening and, if appropriate, the resealing process.

(ii) Records shall be kept of the number of adults unable to open and of the number of the other adults tested who fail to properly resecure the special packaging. The number adults who successfully open the special packaging and then properly resecure the special packaging (if resealing is appropriate) is the percent of adult-use effectiveness of the special packaging. In the case of unit packaging, the percent of adult-use effectiveness shall be the number of adults who successfully open a single(unit) package.

(iii) Adult-use effectiveness of not less than 90 percent.

Van Blarcom Closures, Inc.

1271-032

January 13, 2000

Adult-Resecuring Procedure

1. After the adult participant in either the senior-adult test of 16 CFR 1700.20(a)(3) or the younger-adult test of 16 CFR 1700.20(a)(4) has resecured the package, or at the end of the test period (whichever comes first), the tester shall take the package and place it out of reach. The adult participant shall not be allowed to handle the package again.

2. The packages that have been opened and appear to be resecured by adults shall be tested by children according the child-test procedures to determine if the packages have been properly resecured. The packages are given to the children without being opened or resecured again for any purpose.

3. Using the results of the adult tests and the tests of apparently-secured package by children, the adult use effectiveness is calculated as follows:

a. Adult use effectiveness.

1. The number of adult opening and resecuring failures, plus the number of packages that were opened by the children during the full 10-minute test that exceeds 20% of the apparently-secured packages, equals the total number of failures.

2. The total number of packages tested by adults (which is 100) minus the total number of failures equals the percent adult-use effectiveness.

IV. TEST PARAMETERS

The Package

The test package was the 28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE. For purposes of this test, all of the units tested were empty. Directions to open the package read: TO OPEN PUSH DOWN & TURN---CLOSE TIGHTLY. A picture of the package appears in Figure 1 of this report.

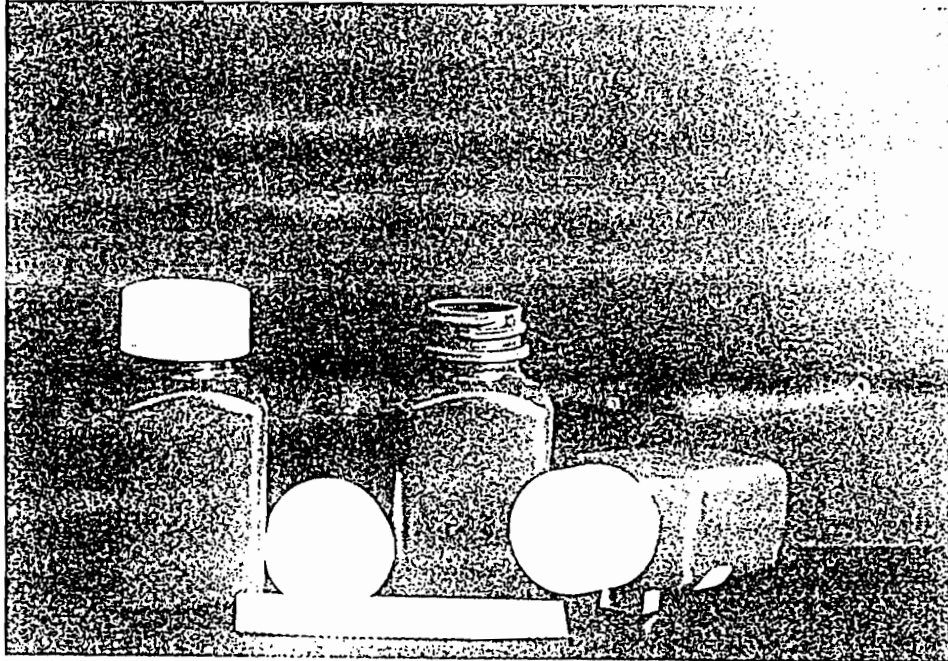
Panelists

Seniors (100) employed in the study satisfied the requirements of the protocol, with ages ranging from 50 to 70 years of age divided into three age groups (50-54, 55-59, and 60-70 years old with 70% female).

An additional 100 children between the ages of 42 and 51 months distributed into three age groups (42-44, 45-48, and 49-51 months, evenly distributed by sex) were employed to determine if the senior-adult panelists properly closed the packages.

Test supervisor(s)

Test supervisor(s) were instructed to conduct the evaluation of the packaging in strict accordance with the current C.F.R. Title 16, Part 1700. To ensure these procedures were adhered to, our complete quality system was followed, including periodic observations throughout the package evaluation.



28mm SAF-CAP III-A ON AN
HDPE RECTANGULAR BOTTLE

Figure 1

V. RESULTS AND DISCUSSION

Results of this study appear in the tables section of the report. These tables represent a compilation of all data obtained during the study. For clarity in presentation and discussion of this information, the following features will be used as the major points of discussion:

- * Senior-use effectiveness
- * Senior-resecuring effectiveness
- * Meeting current Code of Federal Regulations Title 16, Part 1700.

Senior-use effectiveness

The senior panel consisted of 71 females and 29 males. Results of the senior test appear in Table 1 of this report. A total of 25 of the 25 seniors in the 50 to 54 year old age group were successful in opening the first package and opening and properly closing the second package, 25 of the 25 seniors in the 55 to 59 year old age group were successful, and 50 of the 50 seniors were successful in the 60 to 70 year old age group. The senior-use effectiveness was calculated at 100% minus 0 for a final senior-use effectiveness of 100% (which includes the resecuring test), for the 100 seniors and 100 children who tested the packages apparently reclosed by the seniors. The exact opening and closing times are given in the Senior Test Packaging Data.

Senior-resecuring effectiveness

A group of 100 children were employed to test the packages that were apparently reclosed by the senior-adults. Results of the senior-resecuring test with children appear in Table 2 of this report. A total of 5 children were successful in opening the apparently reclosed packages. The amount over 20% ($100 \times .2 = 20$) is 0, and is subtracted from the calculated senior-use effectiveness.

Meeting current C.F.R. Title 16, Part 1700.

The 28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE fulfills the standards senior-resecuring effectiveness according to current C.F.R. Title 16, Part 1700.

Van Blarcom Closures, Inc.
1271-032
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V. CONCLUSION

The data presented in the report demonstrates that the 28mm SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE fulfills the requirements for senior-resealing effectiveness according to the current Code of Federal Regulations Title 16, Part 1700.

EVALUATION OF THE 28MM SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE
 FOR SENIOR-USE EFFECTIVENESS FOR VAN BLARCOM CLOSURES, INC..

Table 1. Package opening test evaluated by adults 50 to 70 years of age for senior use-effectiveness.

	SUCCESSFUL PANELISTS			TOTAL FAILURES
	Panelists Tested	First Opening	Second Opening and Second Closing	
50 – 54 years old:				
Females	18	18	18	0
Males	7	7	7	0
Subtotal	25	25	25	0
55 - 59 years old:				
Females	18	18	18	0
Males	7	7	7	0
Subtotal	25	25	25	0
60 – 70 years old:				
Females	35	35	35	0
Males	15	15	15	0
Subtotal	50	50	50	0
TOTAL	100	100	100	0

SENIOR-USE EFFECTIVENESS (SAUE) = 100.00 – .00 = 100.00%

SENIOR TEST PACKAGE DATA

Client Name: Van Blarcom Closures, Inc.

Description: 28mm Saf-Cap III-A

Contract No: 1271-032

Package Test Number	Test Date	Site Code	Tester Code	Sex	Age	First Opening Fail = 301 sec.	First Closing Stop = 301 sec.	Second Opening Fail = 61 sec.	Second Close Fail = 61 sec.
1	12/06/1999	C961	29	F	68	3	2	2	1
2	12/06/1999	C961	29	F	59	19	6	5	2
3	12/06/1999	C961	29	M	58	3	2	2	1
4	12/06/1999	C961	29	F	54	6	3	2	1
5	12/06/1999	C961	29	F	54	3	2	2	1
6	12/06/1999	C961	29	F	50	2	1	2	1
7	12/06/1999	C961	29	M	56	2	1	2	1
8	12/06/1999	C961	29	F	67	9	3	4	2
9	12/06/1999	C961	29	F	67	3	2	2	1
10	12/06/1999	C961	29	F	61	2	2	2	1
11	12/06/1999	C961	29	F	61	2	1	2	1
12	12/06/1999	C961	29	M	62	2	2	2	2
13	12/06/1999	C961	29	F	68	2	1	1	1
14	12/08/1999	C974	16	F	65	6	3	5	2
15	12/08/1999	C974	16	F	70	5	2	4	2
16	12/08/1999	C974	16	F	64	7	3	5	3
17	12/08/1999	C974	16	F	60	4	2	4	2
18	12/08/1999	C974	16	F	62	3	2	4	2
19	12/08/1999	C974	16	F	60	7	3	4	1
20	12/08/1999	C974	16	F	70	2	1	2	1
21	12/08/1999	C974	16	M	70	6	3	5	2
22	12/08/1999	C974	16	F	50	5	2	4	2
23	12/08/1999	C974	16	F	64	6	1	2	1
24	12/08/1999	C974	16	F	70	9	2	3	2
25	12/06/1999	C981	32	F	65	15	3	3	3
26	12/06/1999	C981	32	M	68	4	2	4	2
27	12/06/1999	C981	32	F	66	7	2	3	1
28	12/08/1999	C974	16	F	50	3	2	3	2
29	12/08/1999	C974	16	F	54	6	2	3	2
30	12/08/1999	C974	16	M	64	3	2	3	2
31	12/08/1999	C974	16	M	58	6	1	3	2
32	12/08/1999	C974	16	F	70	4	3	4	2
33	12/08/1999	C974	16	F	64	9	2	5	2
34	12/08/1999	C974	16	F	70	5	2	4	2
35	12/08/1999	C974	16	F	70	8	3	4	2
36	12/08/1999	C974	16	F	52	6	2	3	2
37	12/08/1999	C974	16	F	67	4	2	4	2
38	12/08/1999	C974	16	F	70	3	2	3	1
39	12/08/1999	C974	16	M	54	3	2	4	2
40	12/08/1999	C974	16	F	50	7	1	3	1
41	12/13/1999	C994	29	M	65	2	2	1	1
42	12/13/1999	C994	14	M	70	4	3	4	1
43	12/13/1999	C994	29	F	65	5	2	5	1
44	12/13/1999	C994	29	M	61	2	1	1	1
45	12/13/1999	C994	14	F	61	2	1	2	1
46	12/13/1999	C994	29	F	62	2	1	1	1
47	12/13/1999	C994	29	F	62	3	2	2	1
48	12/13/1999	C994	14	M	53	1	1	1	1
49	12/13/1999	C994	29	F	58	3	2	2	2
50	12/13/1999	C994	14	M	52	1	1	2	3

SENIOR TEST PACKAGE DATA

Client Name: Van Blarcom Closures, Inc.

Description: 28mm Saf-Cap III-A

Contract No: 1271-032

Package Number	Test Date	Site Code	Tester Code	Sex	Age	First Opening Fail = 301 sec.	First Closing Stop = 301 sec.	Second Opening Fail = 61 sec.	Second Close Fail = 61 sec.
51	12/13/1999	C994	29	F	58	46	3	23	3
52	12/13/1999	C994	14	F	68	1	4	1	1
53	12/13/1999	C994	29	M	62	3	2	2	1
54	12/13/1999	C994	14	F	60	7	5	1	1
55	12/13/1999	C994	29	M	66	3	2	2	2
56	12/13/1999	C994	29	F	59	3	2	3	2
57	12/13/1999	C994	14	F	56	4	1	3	1
58	12/13/1999	C994	29	F	62	2	2	2	1
59	12/13/1999	C994	29	M	58	3	2	2	1
60	12/13/1999	C994	14	M	62	1	1	1	1
61	12/13/1999	C994	14	F	63	1	1	2	1
62	12/13/1999	C994	14	F	58	3	2	1	1
63	12/13/1999	C994	29	M	50	2	1	2	1
64	12/13/1999	C994	29	F	57	3	2	2	1
65	12/14/1999	C992	32	M	52	9	2	2	1
66	12/14/1999	C992	32	M	52	7	2	5	2
67	12/14/1999	C992	32	F	60	2	2	2	2
68	12/14/1999	C992	32	F	62	2	2	2	2
69	12/14/1999	C992	32	M	60	4	2	3	2
70	12/14/1999	C992	32	F	55	14	6	4	1
71	12/14/1999	C992	32	F	50	2	1	2	1
72	12/14/1999	C992	32	F	50	12	2	3	1
73	12/14/1999	C992	32	F	56	2	1	2	1
74	12/14/1999	C992	32	F	56	2	1	2	1
75	12/14/1999	C992	32	M	63	4	2	3	2
76	12/14/1999	C992	32	F	52	3	1	3	1
77	12/14/1999	C992	32	F	54	4	1	2	1
78	12/14/1999	C992	32	M	55	6	1	2	1
79	12/14/1999	C992	32	M	61	2	1	2	1
80	12/14/1999	C992	32	M	62	4	2	3	2
81	12/14/1999	C992	32	F	59	11	1	5	1
82	12/14/1999	C992	32	F	66	2	1	3	1
83	12/14/1999	C992	32	M	53	5	1	5	1
84	12/14/1999	C992	32	F	64	5	1	5	1
85	12/14/1999	C992	32	F	57	15	1	2	1
86	12/14/1999	C992	32	F	59	9	1	4	1
87	12/14/1999	C992	32	M	64	10	1	3	1
88	12/14/1999	C992	32	F	54	12	1	18	1
89	12/15/1999	C293	16	F	56	8	2	3	2
90	12/15/1999	C293	16	F	57	2	1	3	1
91	12/15/1999	C293	16	F	53	2	2	2	2
92	12/15/1999	C293	16	F	59	3	2	3	2
93	12/15/1999	C293	16	F	51	4	2	3	1
94	12/15/1999	C293	16	F	55	3	2	3	2
95	12/15/1999	C293	16	F	50	4	1	3	1
96	12/15/1999	C293	16	F	51	2	2	2	1
97	12/16/1999	C312	14	F	52	5	1	3	1
98	12/17/1999	C958	29	M	57	1	1	1	1
99	12/17/1999	C958	29	F	56	6	2	4	2
100	12/17/1999	C958	29	M	56	3	2	2	1

EVALUATION OF THE 28MM SAF-CAP III-A ON AN HDPE RECTANGULAR BOTTLE
 AS A CHILD-RESISTANT PACKAGE FOR VAN BLARCOM CLOSURES, INC..

Table 2. Senior-reclosed package opening test evaluated by children 42 to 51 months of age for senior-resecuring effectiveness.

Age in Months	Successful Panelists							
				Before Demonstration		After Demonstration		
	Males	Females	Total	Males	Females	Males	Females	Total
42-44	15	15	30	1	0	0	0	1
45-48	20	20	40	1	0	0	0	1
49-51	15	15	30	1	2	0	0	3
Totals	50	50	100	3	2	0	0	5

The amount over 20% ($100 \times .2 = 20$) is 0, and is subtracted from the calculated senior-use effectiveness

S-R CHILD TEST PACKAGE DATA

Client Name: Van Blarcom Closures, Inc.

Description: 28mm Saf-Cap III-A

Contract No#: 1271-032

Package Number	Test Date	Site Code	Tester Code	Birthdate	Age	Sex	Opening Time	Method
1	12/07/1999	C597	32	3/23/1996	44	M	601	0
2	12/07/1999	C597	32	6/11/1996	42	F	601	0
3	12/07/1999	C597	32	6/11/1996	42	M	601	0
4	12/07/1999	C597	32	12/17/1995	48	M	601	0
5	12/07/1999	C597	1	4/14/1996	44	F	601	0
6	12/07/1999	C597	1	5/17/1996	43	M	601	0
7	12/07/1999	C597	32	3/11/1996	45	F	601	0
8	12/07/1999	C597	32	11/29/1995	48	M	601	0
9	12/07/1999	C597	1	5/07/1996	43	F	601	0
10	12/07/1999	C597	1	3/03/1996	45	M	601	0
11	12/09/1999	C142	29	10/18/1995	50	M	601	0
12	12/09/1999	C142	29	9/01/1995	51	M	601	0
13	12/09/1999	C142	14	11/08/1995	49	F	601	0
14	12/09/1999	C142	14	11/19/1995	49	M	185	3
15	12/09/1999	C142	14	8/30/1995	51	F	601	0
16	12/09/1999	C142	14	11/19/1995	49	F	279	3
17	12/10/1999	C671	14	10/03/1995	50	F	601	0
18	12/10/1999	C671	14	12/07/1995	48	M	601	0
19	12/10/1999	C671	29	6/20/1996	42	F	601	0
20	12/10/1999	C671	29	11/30/1995	48	F	601	0
21	12/10/1999	C671	29	10/10/1995	50	F	601	0
22	12/10/1999	C671	29	9/14/1995	51	M	601	0
23	12/10/1999	C671	14	9/19/1995	51	F	601	0
24	12/10/1999	C671	14	3/29/1996	44	M	601	0
25	12/13/1999	C670	16	9/30/1995	50	M	601	0
26	12/13/1999	C670	16	11/16/1995	49	F	601	0
27	12/13/1999	C670	16	12/08/1995	48	F	601	0
28	12/13/1999	C670	16	3/15/1996	45	F	601	0
29	12/13/1999	C670	16	9/25/1995	51	F	601	0
30	12/13/1999	C670	16	10/09/1995	50	F	601	0
31	12/13/1999	C670	16	10/09/1995	50	F	601	0
32	12/13/1999	C670	16	10/11/1995	50	M	601	0
33	12/13/1999	C686	16	6/04/1996	42	F	601	0
34	12/13/1999	C686	16	12/17/1995	48	M	601	0
35	12/13/1999	C686	16	9/27/1995	51	F	601	0
36	12/13/1999	C686	16	10/01/1995	50	M	601	0
37	12/13/1999	C686	16	12/27/1995	48	F	601	0
38	12/13/1999	C686	16	2/26/1996	46	M	601	0
39	12/13/1999	C686	16	9/29/1995	50	F	601	0
40	12/13/1999	C686	16	9/01/1995	51	M	601	0
41	12/14/1999	C669	14	3/19/1996	45	M	601	0
42	12/14/1999	C669	14	1/19/1996	47	M	601	0
43	12/14/1999	C669	14	1/24/1996	47	M	601	0
44	12/14/1999	C669	14	2/02/1996	46	F	601	0
45	12/14/1999	C669	14	10/21/1995	50	F	167	3
46	12/14/1999	C669	14	6/19/1995	42	F	601	0
47	12/14/1999	C669	14	3/05/1996	45	M	601	0
48	12/14/1999	C669	14	4/09/1996	44	M	601	0
49	12/14/1999	C669	14	4/11/1996	44	M	601	0
50	12/14/1999	C669	14	2/02/1996	46	F	601	0

S-R CHILD TEST PACKAGE DATA

Client Name: Van Blarcom Closures, Inc.

Description: 28mm Saf-Cap III-A

Contract No#: 1271-032

Package Number	Test Date	Site Code	Tester Code	Birthdate	Age	Sex	Opening Time	Method
51	12/14/1999	C669	14	12/18/1995	48	M	601	0
52	12/14/1999	C669	14	4/24/1996	44	F	601	0
53	12/15/1999	C657	29	12/10/1995	48	F	601	0
54	12/15/1999	C657	29	12/18/1995	48	F	601	0
55	12/15/1999	C657	14	12/08/1995	48	F	601	0
56	12/15/1999	C657	14	10/22/1995	50	F	601	0
57	12/15/1999	C657	14	3/01/1996	45	F	601	0
58	12/15/1999	C657	14	2/26/1996	46	F	601	0
59	12/15/1999	C657	14	12/14/1995	48	F	601	0
60	12/15/1999	C657	14	10/07/1995	50	F	601	0
61	12/15/1999	C657	14	3/31/1996	44	M	196	3
62	12/15/1999	C657	14	6/19/1996	42	F	601	0
63	12/16/1999	C672	16	5/03/1996	43	M	601	0
64	12/16/1999	C672	16	11/18/1995	49	M	601	0
65	12/16/1999	C672	16	6/12/1996	42	F	601	0
66	12/16/1999	C672	16	6/01/1996	42	M	601	0
67	12/16/1999	C672	16	9/28/1995	51	M	601	0
68	12/16/1999	C672	16	1/18/1996	47	M	601	0
69	12/17/1999	C666	32	12/22/1995	48	M	601	0
70	12/17/1999	C666	32	4/26/1996	44	M	601	0
71	12/17/1999	C666	32	3/01/1996	46	F	601	0
72	12/17/1999	C666	32	6/17/1996	42	F	601	0
73	12/17/1999	C666	32	1/09/1996	47	F	601	0
74	12/17/1999	C666	32	5/23/1996	43	M	601	0
75	12/17/1999	C666	32	7/01/1996	42	F	601	0
76	12/17/1999	C666	32	9/25/1995	51	M	601	0
77	12/21/1999	C047	32	9/08/1995	51	M	601	0
78	12/21/1999	C047	32	9/16/1995	51	M	601	0
79	12/21/1999	C047	32	7/01/1996	42	M	601	0
80	12/21/1999	C047	32	7/05/1996	42	M	601	0
81	12/21/1999	C047	32	4/27/1996	44	F	601	0
82	12/21/1999	C047	32	1/08/1996	47	F	601	0
83	12/21/1999	C047	32	6/20/1996	42	F	601	0
84	12/21/1999	C047	32	7/02/1996	42	M	601	0
85	12/21/1999	C047	32	12/10/1995	48	M	601	0
86	12/21/1999	C047	32	12/30/1995	48	M	601	0
87	12/21/1999	C047	32	3/19/1996	45	M	601	0
88	12/21/1999	C047	32	10/04/1995	51	M	601	0
89	12/22/1999	C047	16	10/15/1995	50	M	601	0
90	12/22/1999	C047	16	1/12/1996	47	M	601	0
91	12/22/1999	C047	16	3/27/1996	45	F	601	0
92	12/22/1999	C047	16	3/17/1996	45	F	601	0
93	12/22/1999	C047	16	1/10/1996	47	F	601	0
94	12/22/1999	C047	16	2/17/1996	46	M	601	0
95	12/29/1999	C764	32	6/16/1996	42	F	601	0
96	12/29/1999	C764	32	12/23/1995	48	M	601	0
97	12/29/1999	C764	32	1/31/1996	47	M	202	3
98	12/29/1999	C764	32	12/20/1995	48	F	601	0
99	12/29/1999	C764	32	5/20/1996	43	M	601	0
100	12/29/1999	C764	32	4/18/1996	44	F	601	0

Van Blarcom Closures, Inc.

1271-032

January 13, 2000

Test Supervisors

1	-	Shirley Kasper
2	-	Betty Rousseau
3	-	Susan Jakober
4	-	Linda Contiliano
7	-	Richard Ward
9	-	Anita Burgey
10	-	Elaine Villani
12	-	Paula Giannotti
14	-	Susan Davies
15	-	Marie Gerland
16	-	Helen Lambert
29	-	Julie Grosner
31	-	Barbara George
32	-	Ruth Ann Hains

Methods of opening

0	-	Not opened
1	-	Correct method
2	-	Used fingernail
3	-	Used fingers
4	-	Used teeth
5	-	Used feet
6	-	Shelled
7	-	Damaged package
8	-	Touched indicator
9	-	Used teeth and fingers
10	-	Banged on floor
11	-	Caused noticeable leakage
12	-	Used bottle as lever

Van Blarcom Closures, Inc.
1271-032
January 13, 2000

Addendum

Nothing unusual to report.