

<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

## **SECTION C**

This document covers carbohydrate electrolyte beverage powder, packaged in a pouch for use by the Department of Defense as a component of operational rations.

### **C-1 ITEM DESCRIPTION**

#### **PCR-B-013A BEVERAGE POWDER, CARBOHYDRATE ELECTROLYTE, PACKAGED IN A POUCH**

##### Flavors, Designs and Packages

###### Flavors

- I Fruit Punch
- II Grape
- III Lemon Lime
- IV Orange

###### Designs

- A Flat pouch
- B Flat, interlocking closure pouch

###### Packages

- Package C Meal, Ready to Eat (MRE)
- Package H Food Packet, Carbohydrate Supplement

### **C-2 PERFORMANCE REQUIREMENTS**

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements (PCR) document. The approved sample shall serve as the product standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged food shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Powdered product.

(1) Appearance. The beverage powder shall be a free flowing homogenous mixture and have a color typical of the flavor specified. The packaged food shall be free from foreign materials.

(2) Odor. The packaged food shall have an odor typical of the flavor specified. The packaged food shall be free from foreign odors.

(3) Texture. The packaged food shall be free from hard lumps.

D. Hydrated product. The beverage powder, when hydrated according to directions for use, shall dissolve within 2 minutes of constant shaking.

(1) Appearance.

a. Flavor I. The fruit punch shall have a bright red color.

b. Flavor II. The grape shall have a bright blue color.

c. Flavor III. The lemon lime shall have a light yellow/green color.

d. Flavor IV. The orange shall have an orange color.

(2) Odor and flavor. The beverage powder shall be free from foreign odors or flavors.

a. Flavor I. The odor shall be a well-balanced blend of cherry with orange citrus notes. The flavor shall be a moderate strong, artificial cherry/citrus flavor. The product may be slightly salty.

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

b. Flavor II. The odor shall be a moderate sweet artificial grape. The flavor shall be a moderate sweet grape flavor. The product may be slightly salty.

c. Flavor III. The odor shall be an artificial lemon lime with some slight citrus notes. The flavor shall be a moderate blend of sweet lime and mild lemon citrus notes. The product may be slightly salty.

d. Flavor IV. The odor shall be a moderate orange citrus. The flavor shall be a moderate orange with artificial orange notes. The product may be slightly salty.

(3) Texture. The prepared beverage shall have no discernable lumps and shall be sediment free.

E. Net weight. The net weight of the pouch of beverage powder shall be not less than 24 grams.

F. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

G. Analytical requirements.

(1) Moisture content. The moisture content shall be not greater than 3.5 percent.

(2) Nutrient content.

a. Sodium content. The sodium content shall be not less than 100 mg and not greater than 175 mg.

b. Potassium content. The potassium content shall be not less than 40 mg and not greater than 75 mg.

d. Carbohydrate content. The carbohydrate content shall be not less than 22 grams.

(3) Fructose content. The finished product shall not contain fructose as an ingredient.

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

### **C-3 MISCELLANEOUS INFORMATION**

THE FOLLOWING INGREDIENTS ARE FOR INFORMATION ONLY. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients for flavor I may be as follows: Sucrose, dextrose, citric acid, salt, sodium citrate, monopotassium phosphate, natural and artificial flavors, calcium silicate, Red 40, partially hydrogenated coconut oil.

B. Ingredients for flavor II may be as follows: Sucrose, dextrose, citric acid, natural and artificial grape flavor, salt, sodium citrate, monopotassium phosphate, calcium silicate, coconut oil, Blue 1, Red 40.

C. Ingredients for flavor III may be as follows: Sucrose, dextrose, citric acid, salt, sodium citrate, natural lemon and lime flavors with other natural flavors, monopotassium phosphate, calcium silicate, Yellow 5.

D. Ingredients for flavor IV may be as follows: Sucrose, dextrose, citric acid, salt, sodium citrate, natural orange flavors with other natural flavors, monopotassium phosphate, calcium silicate, partially hydrogenated soybean and cottonseed oils, Yellow 6.

### **SECTION D**

#### **D-1 PACKAGING**

A. Packaging. Twenty-four (24) grams of powdered product shall be packaged in a barrier pouch as described below. The pouch will be used as a package and as a hydrating pouch for the beverage.

(1) Design A Flat pouch.

a. Pouch material. The pouch shall be fabricated from 0.002 inch thick ionomer or polyethylene film inner layer laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then laminated to 0.0005 inch thick polyester. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

food packaging and shall not impart an odor or flavor to the product. The complete exterior surface of the pouch shall be uniformly colored in the range of 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of FED-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat design preformed pouch having inside dimensions of 4-7/8 ( $\pm 1/8$  inch) by 8-3/8 inches ( $\pm 1/8$  inch). The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8, +3/16 inch) wide seals. The side and bottom seal shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,A,(4),a. Alternatively, the pouch shall exhibit no rupture or seal separation greater than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c. A tear nick or notch shall be provided on one or two opposite edges of the pouch. A 1/8-inch wide lip may be incorporated at the open end of the pouch.

(2) Design B Flat interlocking closure pouch.

a. Pouch material. The interlocking closure preformed pouch shall be fabricated from 0.002 inch thick ionomer or polyethylene film inner layer laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then bonded to 0.0005 inch thick polyester. The three plies may be laminated with nylon on the exterior of the pouch. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product. The complete exterior surface of the pouch shall be uniformly colored in the range of 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of FED-STD-595.

b. Pouch construction. The pouch shall be a flat design preformed pouch with an interlocking closure. The design and dimensions shall be as indicated in Figure 1. The pouch shall be made by heat sealing the sides and top of the pouch with 3/8-inch (+1/8, -1/4) wide seals. The pouch shall exhibit no rupture or seal separation greater than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c. The interlocking closure of the pouch shall not leak more than 15 ml when tested in accordance with E-6,A,(5). A tear nick or notch shall be provided on one or two opposite edges of the pouch above the interlocking closure. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

(3) Pouch filling and sealing (Design A and B). Product shall be inserted into the pouch and the filled pouch shall be sealed with a 1/8 to 1 inch wide heat seal. The closure seal shall be applied no more than 1/2 inch from the open end of the pouch. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,A,(4),b. Alternatively, the pouch shall exhibit no rupture or seal separation greater than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c.

## **D-2 LABELING**

A. Pouches. Each pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other, dark, contrasting color which is free of carcinogenic elements. The label shall contain the following information:

- (1) Name and flavor of product (letters not less than 1/8 inch high)
- (2) Ingredients
- (3) Date 1/
- (4) Net Weight
- (5) Contractor's name and address
- (6) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations.

(7) Directions for Design A flat pouch:

**Allow water just chemically purified to stand 30 minutes before adding to beverage powder.**

**TEAR POUCH AT NOTCH, ADD 12 OZ WATER (1/2 CANTEEN CUP) TO POUCH. FOLD OVER TOP OF POUCH. FIRMLY HOLDING TOP OF POUCH, SHAKE 30 SECONDS.**

(8) Directions for Design B flat interlocking closure pouch:

**Allow water just chemically purified to stand 30 minutes before adding to beverage powder.**

**TEAR POUCH AT NOTCHES. OPEN ZIPPER, ADD 12 OZ WATER (1/2 CANTEEN CUP) TO FILL LINE. CLOSE ZIPPER. SHAKE TO MIX.**

<p><b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b></p>
---

*SINGLE USE ONLY.*

(9) Fill line for Design B flat interlocking closure pouch: A fill line (not less than 1/32 inch thick, not less than 2 inches long and centered) shall be placed on the pouch/label for 12-ounce fill at  $6\text{-}1/2 \pm 1/4$  inches from the inside edge of the closure seal.

1/ Each pouch shall have the date of pack noted by using a four-digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 25 October 2004 would be coded as 4299. The Julian day code shall represent the day the product was packaged into the pouch.

**D-3 PACKING**

A. Packing for shipment to ration assembler. Not more than 40 pounds of pouched product shall be packed in a fiberboard shipping container constructed in accordance with style RSC-L, class domestic, variety SW, grade 200 of ASTM D5118/D5118M-95 (2001) Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D1974-98 (2003) Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

**D-4 MARKING**

A. Shipping containers. Shipping containers shall be marked in accordance with DSCP FORM 3556, Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence.

**SECTION E INSPECTION AND ACCEPTANCE**

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC Z1.4-1993 will be utilized. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

DEPARTMENT OF THE ARMY  
FCDD-SCC-EMR  
COMBAT CAPABILITIES DEVELOPMENT COMMAND-SOLDIER CENTER  
10 GENERAL GREENE AVENUE  
NATICK, MA 01760-5056

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.



<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

(2) Conformance inspection. Conformance inspection shall include the examinations and the methods of inspection cited in this section.

**E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)**

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements utilizing the double sampling plans indicated in ANSI/ASQC Z1.4-1993. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 major defects and 4.0 for minor defects. Defects and defect classifications are listed in Table I.

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<b><u>Powdered product</u></b>
101		Product not carbohydrate electrolyte beverage powder of the flavor specified.
102		Product contains fructose. <u>3/</u>
		<u>Appearance</u>
	201	Beverage powder not free flowing or not a homogenous mixture.
	202	Powder color not typical of flavor specified.
		<u>Odor</u>
103		Powdered product not typical of odor specified.
		<u>Texture</u>
	203	Presence of hard lumps. <u>4/</u>
		<u>Weight</u>
	204	Net weight of an individual pouch less than 24 grams.

<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

TABLE I. Product defects 1/ 2/ - Continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<b><u>Hydrated product 5/</u></b>
		<u>Appearance</u>
	205	Flavor I not bright red color.
	206	Flavor II not bright blue color.
	207	Flavor III not light yellow/green color.
	208	Flavor IV not orange color.
		<u>Odor and flavor</u>
104		Flavor I product odor not a well-balanced blend of cherry with orange citrus notes or flavor not a moderate strong, artificial cherry/citrus.
105		Flavor II product odor not a moderate sweet artificial grape or flavor not a moderate sweet grape.
106		Flavor III product odor not an artificial lemon lime with some slight citrus notes or flavor not a moderate blend of sweet lime and mild lemon citrus notes.
107		Flavor IV product odor not a moderate orange citrus or flavor not a moderate orange with artificial orange notes.
		<u>Texture</u>
108		Product has discernable lumps or exhibits sedimentation.

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, wood, glass, metal, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale, shall be cause for rejection of the lot. Foreign flavor is not applicable to powdered product.

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot. Palatability not applicable to powdered product.

3/ The presence of fructose shall be verified with the statement of ingredients on the label.

4/ Lumps that do not fall apart under light pressure between the fingers shall be scored as a defect.

5/ Prior to conducting the hydrated product examination, the beverage powder shall be reconstituted per label instructions. Product that does not fully dissolve within 2 minutes with constant shaking shall be cause for rejection of the lot.

**B. Methods of inspection.**

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 36 months at 80°F or 6 months at 100°F. Upon completion of storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight. The net weight of the filled and sealed pouches shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 1.0 gram.

(3) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches that have been selected at random from the lot. The composited sample shall be prepared and analyzed in accordance with the following method of the Official Methods of Analysis of AOAC International:

<u>Test</u>	<u>Method Number</u>
Moisture	925.45A, or 2007.04

Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

(4) Nutrient Content. The sodium, potassium and carbohydrate content shall be verified by the NLEA “Nutrition Facts” label. Product not conforming to the sodium, potassium and carbohydrate content as specified in section C of this document shall be cause for rejection of the lot.

**E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)**

A. Packaging.

(1) Pouch material certification. Materials listed below may be accepted on the basis of a contractor’s certification of conformance to the indicated requirements. In addition, compliance to the requirements for inside pouch dimensions and dimensions of the manufacturer’s seals may be verified by certification of conformance.

<u>Requirement</u>	<u>Requirement paragraph</u>	<u>Test procedure</u>
Thickness of laminated material	D-1,A,(1),a & D-1,A,(2),a	As specified in ASTM D2103-03 <u>1/</u>
Aluminum foil thickness	D-1,A,(1),a & D-1,A,(2),a	As specified in ASTM B479-00 <u>2/</u>
Laminated material identification and construction	D-1,A,(1),a & D-1,A,(2),a	Laboratory evaluation
Color of laminated material	D-1,A,(1),a & D-1,A,(2),a	Visual evaluation by FED-STD-595 <u>3/</u>

1/ ASTM D2103-03 Standard Specification for Polyethylene Film and Sheeting

2/ ASTM B479-00 Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications

3/ FED-STD-595 Colors Used in Government Procurement

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

(2) Unfilled preformed pouch certification. A certification of conformance may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A,(1),a and b and D-1,A,(2), a and b. When deemed necessary by the USDA, testing of the unfilled preformed pouches for seal strength shall be as specified in E-6,A,(4),a.

(3) Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in Table II. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects.

TABLE II. Filled and sealed pouch defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear, hole, or open seal.
102		Seal width less than 1/16 inch. <u>2/</u>
103		Presence of delamination. <u>3/</u>
104		Unclean pouch. <u>4/</u>
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
107		Fill line missing or does not measure within $\pm 1/4$ inch of 6-1/2 inches from the inside edge of the closure seal.
108		Not packaged as specified.
	201	Label missing, incorrect, or illegible.
	202	Tear nick or notch missing.
	203	Seal width less than 1/8 inch but greater than 1/16 inch.

<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

TABLE II. Filled and sealed pouch defects 1/ - Continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
	204	Presence of delamination. <u>3/</u>
	205	Design B pouch does not meet design or dimensions cited in Figure 1.
	206	Fill line on Design B pouch not required thickness or length.

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed pouch.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the pouch after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise- counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch ( $\pm 1/16$  inch) from the delaminated area. The pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (for example, glass, metal filings) or generally detracts from the clean appearance of the pouch. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential pouch damage and which can be readily removed by gently shaking the package or by gently brushing the pouch with a clean dry cloth.

b. Dried product which affects less than 1/8 of the total surface area of one pouch face (localized and aggregate).

c. Water spots.

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

(4) Seal testing. The pouch seals shall be tested for seal strength as required in a, b or c for Design A, and as required in c for Design B.

a. Unfilled preformed pouch (Design A). The seals of the unfilled preformed pouches for the pouch shall be tested for seal strength in accordance with ASTM F 88, Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the results of the three specimens cut from that side. Any average seal strength of less than 6

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

pounds per inch of width or any test specimen with seal strength of less than 5 pounds per inch of width shall be a major defect and shall be cause for rejection of the lot.

b. Pouch closure (Design A). The closure seals of the pouches for the packet shall be tested for seal strength in accordance with ASTM F 88. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. The average seal strength of any side, end or closure shall be calculated by averaging the three specimens cut from that side, end or closure. Any average seal strength of less than 6 pounds per inch of width or any test specimen with seal strength of less than 5 pounds per inch of width shall be a major defect and shall be cause for rejection of the lot.

c. Internal pressure test (Design A and B). The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the side and top or of the pouch. For testing the closure seal, when applicable, the bottom seal shall be cut off. For Design B pouch, when testing the closure seal, the top and interlocking closure shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four-seal tester shall be equal to the thickness of the product +1/16 inch. Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer's seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table II, footnote 2/) shall be considered a test failure. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

(5) Interlocking closure test (Design B). The interlocking closure of the pouch shall be tested. The lot size is expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-2. Open a filled and sealed interlocking closure pouch and prepare beverage in accordance with instructions using 70°F (±5°F) water. Close pouch. Invert pouch and suspend pouch for 15 seconds. Collect and measure any water that drips. A



<b>PCR-B-013A</b> <b>25 October 2004</b> <b><u>W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)</u></b> <b>SUPERSEDING</b> <b>PCR-B-013</b> <b>15 July 2003</b>
---

pouch that leaks more than 15 ml shall be a major defect and shall be cause for rejection of the lot.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in Table III below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or of improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	More than 40 pounds of product.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

**SECTION J REFERENCE DOCUMENTS**

DSCP FORMS

DSCP FORM 3556 Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence

FEDERAL STANDARD

FED-STD-595 Colors Used in Government Procurement

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

B479-00	Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications
D1974-98 (2003)	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103-03	Standard Specification for Polyethylene Film and Sheeting
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F88-00	Standard Test Method for Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL Official Methods of Analysis of the Association of Official Analytical Chemists International

**PCR-B-013A**  
**25 October 2004**  
**W/Change 04 28 May 20 ES20-032 (DSCP-SS-20-00481)**  
**SUPERSEDING**  
**PCR-B-013**  
**15 July 2003**

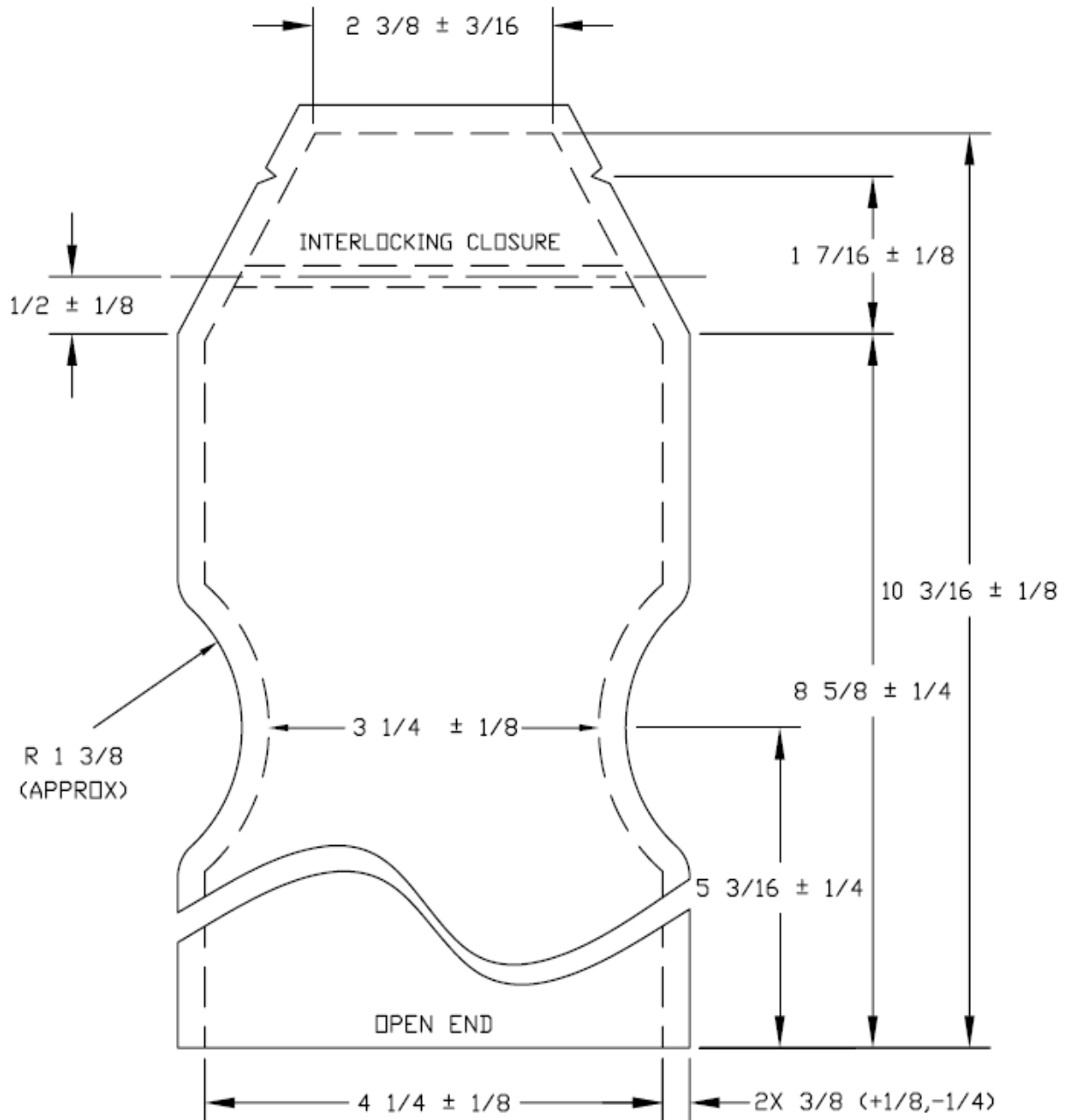


FIGURE 1. Design B Flat Interlocking Closure Pouch  
 (Not actual size)