PCR-C-041
W/Change 09_18 Apr 14 ES14-030 (DSCP-SS-14-00936)
26 November 2003

SECTION C

This document covers fortified cocoa beverage powder packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-C-041, COCOA BEVERAGE POWDER, FORTIFIED, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Designs

A Flat pouch (discontinued)
B Flat, interlocking closure pouch

Packages

Package A – Meal, Cold Weather (MCW)
Package B – Food Packet, Long Range Patrol (LRP)
Package C – Meal, Ready-to-Eat (MRE)

C-2 PRODUCT REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model inspection (PDM) as applicable, in accordance with the tests and inspections of Section E of this Product 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 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^{o}F.

C. Powdered product.

(1) Appearance. The fortified cocoa beverage powder shall be a free-flowing well-blended light brown homogenous mixture. The packaged food shall be free from foreign materials.

(2) Odor. The packaged food shall have an odor typical of cocoa and sweet milk solids. The packaged food shall be free from foreign odors.

(3) Texture. The fortified cocoa beverage powder shall be free from lumps that do not fall apart under light pressure between fingers and shall have a fine texture.

D. Hydrated product.

(1) Appearance. The fortified cocoa beverage powder shall disperse readily in hot or cold water. The hydrated product shall have a well-blended, uniform consistency and be free of floating, agglomerated cocoa particles. The fortified cocoa shall have a milk chocolate color.

(2) Odor and flavor. The fortified cocoa beverage powder shall have a sweet, chocolate cream-like odor and flavor. The hydrated product shall be free from foreign odors and flavors.

E. Weight. The average net weight shall be not less than 42.5 grams. The net weight of an individual pouch shall be not less than 40.4 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 3.0 percent.

(2) Vitamin B_1 (thiamine mononitrate). The Vitamin B_1 content shall be not less than 0.84 mg per pouch.

(3) Vitamin B_6 (pyridoxine hydrochloride). The Vitamin B_6 content shall be not less than 1.26 mg per pouch.

~~(4) Vitamin A. The Vitamin A content shall be not less than 752 retinol equivalents per pouch.~~

H. Microbiological requirement.

(1) Salmonella. The fortified cocoa beverage powder shall be salmonella negative.

I. Ingredient requirements.

(1) Sugar. Sugar shall be white, refined, granulated superfine, extrafine or smaller grind, cane or beet sugar or a combination thereof.

(2) Creamer, nondairy, dry. The dry, nondairy creamer shall contain not less than 30 percent fat and shall be a white to light cream color, free-flowing, uniformly granular powder that is free from foreign materials and free from noticeable scorched particles. The product shall impart a sweet creamy flavor, free from foreign or objectionable flavors and odors (e.g., sour, malty, tallowy, stale, soapy, rancid, or bitter).

(3) Milk, nonfat dry (low heat). Nonfat dry milk shall be U.S. Extra Grade, Low Heat as defined in the U.S. Standards for Grades of Nonfat Dry Milk (spray process). The nonfat dry milk shall be fortified with vitamin D and may be fortified with vitamin A. The nonfat dry milk shall be spray dried not more than 60 days prior to the time the finished cocoa beverage powder is filled into the pouch and the pouch sealed. The nonfat dry milk shall be salmonella free.

(4) Cocoa. Cocoa powder shall be prepared from nibs of domestically roasted, mature, well fermented, sound and wholesome cocoa beans, which have been properly dried, cured, and mildly alkalized in accordance with the definitions and standards of the Food and Drug Administration. The pH shall be not less than 6.0 nor more than 7.5, and the fat content (cocoa butter) shall be not less than 10 percent. Chemically extracted cocoa, in part or whole, shall not be acceptable. When washed with petroleum ether, not less than 98 percent by weight shall pass through a U.S. Standard No. 200 sieve.

(5) Salt. Salt shall be iodized white, refined sodium chloride with or without anticaking agents.

(6) Vitamins. ~~Vitamin A shall be the dry, water-dispersible vitamin A palmitate, stabilized in gelatin, gums, or other edible materials with or without sugar. One hundred percent of the stabilized vitamin A palmitate shall pass through a U.S. Standard No. 20 sieve, and not less than 90 percent shall pass through a U.S. Standard No. 30 sieve.~~ Thiamine mononitrate, and pyridoxine hydrochloride shall be of U.S. Pharmacopoeia grade, and the particle size shall be such that the vitamins will be uniformly distributed throughout the cocoa beverage powder.

(7) Flavoring. Vanilla extract, pure vanilla sugar, vanillin, ethyl vanillin, methyl vanillin or combinations of these may be used.

(8) Lecithin. Lecithin shall comply with the Food Chemicals Codex description for lecithin.

(9) Stabilizers. Stabilizers shall be of cold water soluble type.

(10) Whey, dried, reduced lactose. The dried reduced whey shall comply with the Food and Drug Administration's regulations for Direct Food Substances Affirmed as Generally Recognized as Safe. The whey shall be free flowing and not more than 60 days old from time of spray drying to the time the finished cocoa beverage powder is filled into the envelope and the envelope sealed. The reduced lactose whey shall be salmonella free. The whey shall be manufactured in a plant approved by the Dairy Division, AMS, USDA. The whey shall have been pasteurized before spray drying and meet the following analytical requirements:

Protein (N x 6.38)	Not less than 16.0
Ash	Not more than 18 percent
Moisture	Not more than 5 percent

J. Ingredients and formulation. Ingredients shall be uniformly mixed in the following proportions:

Ingredient	Percent by weight
Sugar	Not more than 45 percent
Nondairy creamer	Not more than 35 percent
Nonfat dry milk (solids) 1/	Not less than 9.9 percent
Cocoa	Not less than 9.5 percent
Salt	Not more than 0.5 percent
Vitamins	As specified in C-2,G.
Flavoring	Sufficient to provide an acceptable flavor in the finished product.
Lecithin	Not more than 1 percent
Stabilizers	Not more than 1 percent

1/ Whey, dried, reduced lactose meeting the requirements of C-2, I (10), may be substituted on a 1 for 1 basis.

SECTION D

D-1 PACKAGING

A. Packaging. A net weight of 42.5 grams of fortified cocoa beverage powder shall be filled into a preformed barrier pouch as described below.

(1) Design B Flat, interlocking closure pouch. The pouch shall be used as a package and as a hydrating pouch for the beverage.

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 material shall be approved for addition of hot water (less than or equal to 212°F). For package A (MCW), the complete exterior of the pouch shall be colored overall with a color in the range of 37778 through 37886 of FED-STD-595, Colors Used in Government Procurement. For Package B (LRP) and Package C (MRE), 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,B,(2). The interlocking closure of the pouch shall not leak more than 15 ml when tested in accordance with E-6,B,(3). A tear nick or notch shall be provided on one or two opposite edges of the pouch above the interlocking closure to facilitate opening of the filled and sealed pouch. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

c. Pouch filling and sealing. 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 pouch shall exhibit no rupture or seal separation greater than 1/16 inch when tested for internal pressure resistance as specified in E-6,B,(2).

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 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 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 6 OZ HOT OR COLD WATER (1/4 CANTEEN CUP) TO FILL LINE. CLOSE ZIPPER. SHAKE TO MIX. *SINGLE USE ONLY*.

(8) 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 6-ounce fill at 4-1/8 ± 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, 26 November 2003 would be coded as 3330. 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 flat in layers 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, 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.

(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 product 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:

US Army Research, Development and Engineering Command
Natick Soldier Center
AMSRD-NSC-CF-F
15 Kansas Street
Natick, MA 01760-5018

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 two (2) working days upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the examinations and 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 product requirements specified in Section C of this document 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 the contents of one 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 for 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
Major	Minor	
101		Product not fortified cocoa beverage powder.
		Powdered product
		Appearance
	201	Beverage powder not free flowing or not a light brown homogenous mixture.
		Odor
102		Powdered product does not have typical cocoa and sweet milk solids odor.

		Texture
	202	Presence of hard lumps. 3/
	203	Not fine in texture.
		Weight
	204	Net weight of an individual pouch less than 40.4 grams. 4/
		Hydrated product 5/
		Appearance
103		Does not disperse readily in hot or cold water.
	205	Not a uniform consistency.
104		Not free of agglomerated cocoa particles.
	206	Not milk chocolate in color.
		Odor and flavor
105		Cocoa beverage not a sweet, chocolate cream-like odor or flavor.

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.

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

4/ Sample average net weight less than 42.5 grams shall be cause for rejection of the lot.

5/ Prepare beverage in accordance with instructions on primary container. Use a sufficient amount of product to prepare 6 ounces of beverage.

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 6 months at 100°F or 36 months at 80°F. Upon completion of either 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 on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.1gram.

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

Test	Method Number
Moisture	925.45

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.
Using the same composite sample, vitamin testing is listed below:

Test	Method Number
~~Vitamin A~~	~~992.06, or 2001.13~~
Vitamin B_1	986.27 1/
Vitamin B_6	985.32, or 2004.07 1/

Test results shall be reported to the nearest 0.01 milligram for B_1 and B_6, and RE for Vitamin A. Any nonconforming result shall be cause for rejection of the lot.

1/ Tests will be conducted for Vitamins ~~A,~~ B_1, and B_6 on the first production lot and USDA will verify the formula. A certificate of conformance will be provided on all future lots. If the formula is changed or a new contract starts, then another set of tests shall be conducted, a Certificate of Analysis will be provided and USDA will verify the formula.

(4) Microbiological testing. The finished product shall be tested for Salmonella. Five filled and sealed pouches shall be selected at random from the lot regardless of lot size. The pouched

product shall be individually tested for Salmonella in accordance with the Official Methods of Analysis of the AOAC International, method 986.35, 996.08, and 2000.06 D (c). Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the microbiological requirements shall be cause for rejection of the lot.

NOTE: The following conditions apply for salmonella and microbiological testing:

(1) For prepackaged product received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis that the product is Salmonella negative and meets all microbiological requirements.

(2) For bulk product received, the contractor is responsible for providing a Certificate of Analysis stating that the bulk product is Salmonella negative and meets all microbiological requirements. USDA Salmonella and additional microbiological testing is required for each end item lot and shall be the basis for lot acceptance with respect to Salmonella and other microbiological testing requirements.

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

A. Packaging.

(1) Pouch material certification. Material listed below may be accepted on the basis of a contractor's certification of conformance to the indicated requirements. Compliance to 21 CFR substances in contact with hot water (less than or equal to 212°F) may be verified by certificate of conformance (CoC). In addition, compliance to the requirements for inside pouch dimensions and dimensions of manufacturer's seals may be verified by certificate of conformance.

Requirement	Requirement Paragraph	Test procedure
Thickness of films for laminated material	D-1,A,(1)a	As specified in ASTM D2103-97 1/
Aluminum foil thickness	D-1,A,(1)a	As specified in ASTM B479-00 2/
Laminated material identification and construction	D-1,A,(1)a	Laboratory evaluation
Color of laminated material	D-1,A,(1)a	Visual evaluation by FED-STD-595 3/

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

2/ ASTM B479-00 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

(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.

(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
Major	Minor	
101		Tear, hole, or open seal.
102		Seal width less than 1/16 inch. 2/
103		Presence of delamination. 3/
104		Unclean pouch. 4/
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/
107		Not packaged as specified.
108		Pouch fill line missing or does not measure 4-1/8 ± 1/4 inches from the inside edge of the closure seal.
	201	Label missing, incorrect, or illegible.
	202	Tear nick or notch missing or does not facilitate opening.

203	Seal width less than 1/8 inch but greater than 1/16 inch.
204	Presence of delamination. 3/
205	Pouch does not meet design or dimensions cited in Figure 1.
206	Fill line on 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 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.

B. Methods of Inspection.

(1) Internal pressure test. 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 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 3/) 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.

(2) Interlocking closure test. 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 pouch that leaks more that 15 ml shall be a major defect and shall be cause for rejection of the lot.

C. 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 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
Major	Minor	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. 1/
	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.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

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

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199) and (9CFR Parts 1-391)

U.S. Standards for Grades of Nonfat Dry Milk

FEDERAL STANDARD

FED-STD-595	Colors Used in Government Procurement

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC)

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

ASTM International

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 Shipping Containers
D2103-03	Standard Specification for Polyethylene Film and Sheeting
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL Official Methods of Analysis (OMA) of the AOAC International

UNITED STATES PHARMACOPOEIA (USP)

NATIONAL ACADEMY OF SCIENCES Food Chemicals Codex

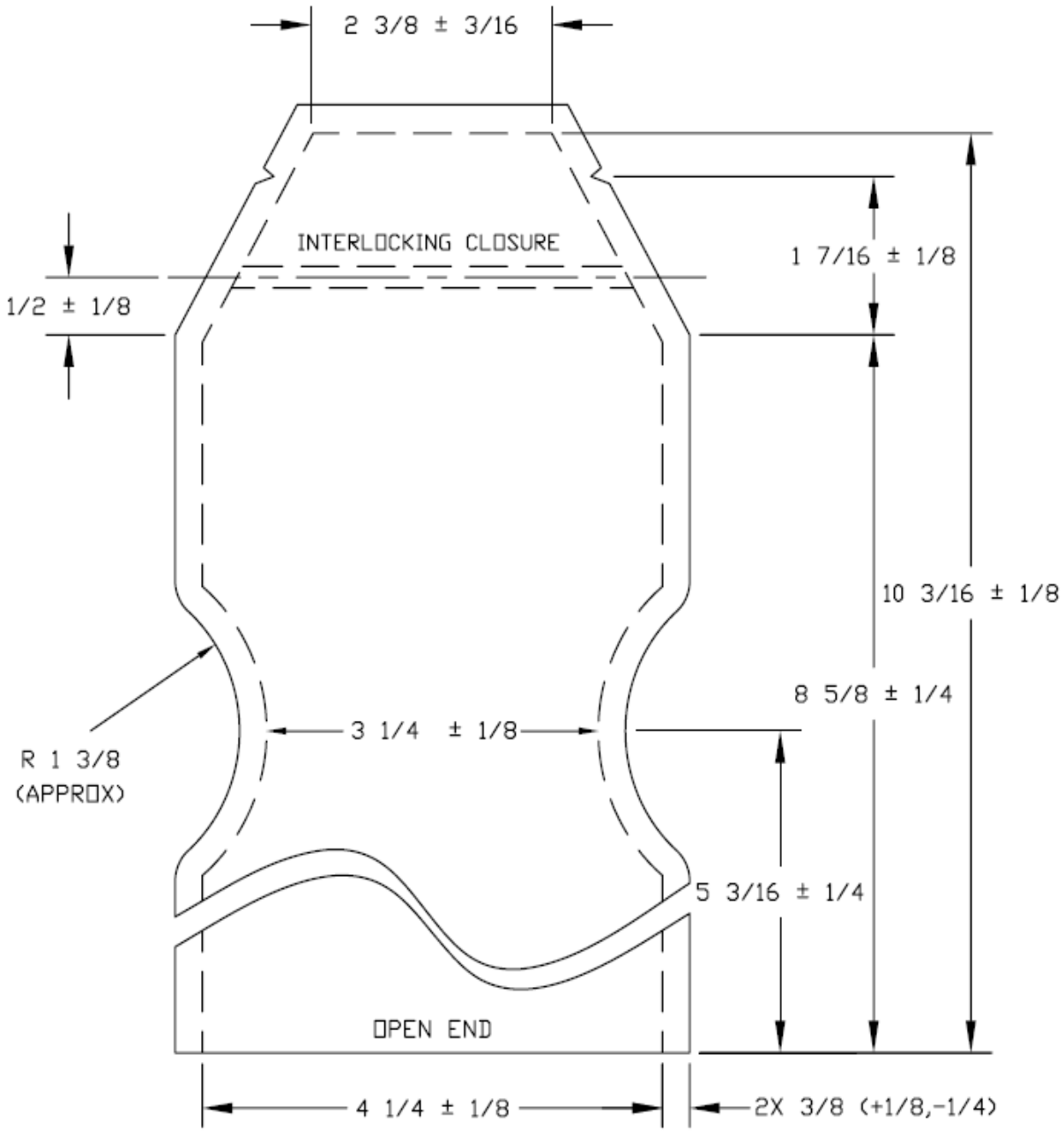

FIGURE 1. Design B Flat, Interlocking Closure Pouch
(Not actual size)

PCR-C-041
W/Change 09 18 Apr 14 ES14-030 (DSCP-SS-14-00936)
26 November 2003

For DLA Troop Support Website Posting

RDNS-SEC-F 18 April 2014

TO: DLA Troop Support – Subsistence DSCP-FTRE

SUBJECT: ES14-030 (DSCP-SS-14-00936); Request change to Vitamin A content requirements for PCR-C-039, Cheese Spread, Cheddar, Fortified, Types I, II, and III; PKG & QAP A-A-20328B Nut Butters and Nut Spreads, Regular, Stabilized, Fortified, Salted, Conventional, class A, Type a, Fortification 2, Seasoning (a), Agricultural Practices (1), Style I, (Texture 1 and 3), and Style II, Texture 1, Flavor 2; and PCR-C-041, Cocoa Beverage Powder, Fortified, for use in Meal, Ready-to-Eat™ (MRE™) 34

1. Each year, the US Army Research Institute of Environmental Medicine's (USARIEM's) Ration Analysis Program (RAP) analyzes selected MRE™ components for nutrient levels pre- and post-storage. The resulting data is transitioned to the Combat Feeding Directorate (CFD), US Army Natick Soldier Research, Development and Engineering Center (Natick) and entered into an electronic database, which over time has resulted in an increased amount of nutrient data from a broader set of ration components. In 3QFY13, results from the ongoing study suggested that the MRE™ was exceeding pre-storage Vitamin A requirements set forth in the Nutritional Standards for Operational Rations (NSORs) to a level that was unwarranted for maintaining post-storage levels. Three items assembled in the MRE™ contain Vitamin A fortification and include cheese spread, peanut butter spread, and cocoa beverage powder.

2. In 3QFY13, Natick requested unfortified samples of the cheese and peanut butter spreads to investigate the impact of removing vitamin fortification on sensory characteristics after storage at 100oF for six months. Product was received during 4QFY13 and placed into storage. Samples of the cocoa beverage were not requested due to availability of data already supporting that the removal of vitamin fortification has no negative impact on shelf life characteristics for this dry powdered product.

3. In 2QFY14, during a review of the proposed MRE™ 35 menus by the Army, Office of the Surgeon General (OTSG), the level of Vitamin A was questioned. Natick provided background information associated with the ongoing efforts to reduce the Vitamin A levels including analysis of data from the RAP and shelf life storage studies. The OTSG formally recommended that Vitamin A levels be reduced to avoid the potential for exceeding upper tolerable limits set by the Food and Nutrition Board, Institute of Medicine, during instances where Warfighters consume three or more MREs™ per day.

4. In 3QFY14, unfortified cheese spread and peanut butter samples that had been stored for 6 months at 100oF were evaluated by trained sensory panelists and no significant differences were noted between the sensory characteristics of unfortified samples and "control" fortified samples.

5. Based on these findings and the request from the OTSG, Natick recommends a reduction in the Vitamin A requirement for cheese and peanut butter spreads to not less than 1000 IU per individual serving pouch. In addition, Natick recommends the removal of the Vitamin A requirement from the cocoa beverage powder. This change is recommended to be implemented for all current and future MRE™ contracts.

6. Each year, additional nutrient data will be received and menus analyzed to determine whether requirements are being met. Further changes to fortification will be considered on an as-needed basis.

7. Natick submits the following change to PCR-C-041, Cocoa Beverage Powder, Fortified, Packaged in a Flexible Pouch, Shelf Stable for all current, pending, and future procurements until the document is formally amended or revised:

a. Page 2, Paragraph C-2, G(4) Vitamin A, delete "The Vitamin A content shall be not less than 752 retinol equivalents per pouch."

b. Page 3, Paragraph C-2, I(4) Vitamins, delete Lines 1 and 2, "Vitamin A shall be the dry, water-dispersible vitamin A palmitate, stabilized in gelatin, gums, or other edible materials with or without sugar. One hundred percent of the stabilized vitamin A palmitate shall pass through a U.S. Standard No. 20 sieve, and not less than 90 percent shall pass through a U.S. Standard No. 30 sieve."

c. Page 10, Paragraph E-5, B(3) Analytical, Reference: Vitamin A: delete "Vitamin A" delete "992.06, or 2001.13".

d. Page 10, Paragraph E-5, B(3) after "Test results shall be reported to the nearest 0.01 milligram for B1 and B6" delete "and RE for Vitamin A".

e. Page 10, Paragraph E-5, B(3) Footnote 1/, after "Tests will be conducted for Vitamins" delete "A,".

8. Attached is Change 09, PCR-C-041, Cocoa Beverage Powder, Fortified, Packaged in a Flexible Pouch, Shelf Stable 18 April 2014, with changes to the document indicated by strikethroughs.