PCR-C-081
18 February 2010
W/Change 01 7 Mar 17 ES17-026 (DSCP-SS-17-00638)

SECTION C

This document covers thermostabilized caffeinated chocolate pudding in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-C-081, CAFFEINATED CHOCOLATE PUDDING, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

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 submit a replacement FA or PDM for approval. In any event, all product produced must meet all requirements of this document including product standard comparability.

B. Commercial sterility. The packaged food shall be processed until commercially sterile.

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

D. Appearance. The finished product shall be caffeinated chocolate pudding. The caffeinated chocolate pudding shall be smooth, creamy and moderately thick with no discernable lumps. The caffeinated chocolate pudding shall be a uniform medium brown color. The caffeinated chocolate pudding shall contain no free liquid. The finished product shall be free from foreign materials.

E. Odor and flavor. The packaged food shall have a sweet chocolate odor and a sweet chocolate with a slight vanilla flavor. The pudding may have a slight bitter flavor. The packaged food shall be free from foreign odors and flavors.

F. Texture. The pudding shall be smooth, creamy, and have a moderately thick consistency with no discernable lumps, or chalkiness.

G. Net weight. The average net weight shall be not less than 4.5 ounces (128 grams). The net weight of an individual pouch shall be not less than 4.0 ounces (113 grams).

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

I. Analytical requirements.

(1) Fat content. The fat content shall be not greater than 6.5 percent. The *trans* fat content shall be not greater than 0 grams per serving.

(2) Caffeine content. The caffeine content shall be not less than 200 milligrams and not greater than 250 milligrams per serving.

(3) Total solids. The total solids shall be not less than 35.0 percent.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients and formulation. Ingredients and formulation may be as follows:

Ingredient	Percent by weight
Water	57.90
Non-dairy creamer 1/	17.00
Sugar, white granulated	16.60
Modified food starch 2/	4.50
Dutched cocoa	3.50
Salt, non-iodized	0.20
Anhydrous caffeine	0.18
Sucrose ester	0.10
Natural vanilla flavor	0.02

1/ "Sana-Crème V" Kerry Inc., 100 East Grand Avenue, Beloit, WI 53511

2/ "Thermtex" National Starch and Chemical Co., 10 Finderne Avenue, Bridgewater, N.J. 08807

SECTION D

D-1 PACKAGING

Product shall be filled into pouches in accordance with MIL-PRF-44073, Packaging of Food in Flexible Pouches, Type 1, style 2 or Type 1, style 3.

D-2 LABELING

A. Pouches. Each pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or any other contrasting color, which is free of carcinogenic elements. Prior to thermal processing of the pouches, the product name, lot number, filling equipment number and time stamp shall be applied. All other marking may be applied before or after thermal processing.

(1) Product name (not less than 1/8 inch high).

(2) Pouch code includes: 1/

Lot Number
Filling equipment identification number
Company code
Retort identification number and Retort cook number (Optional)
Time stamp (hour and minute of filling/sealing of operation)

(3) Ingredients
(4) Net weight
(5) Name and address of packer
(6) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA regulations
(7) Caffeine content per serving in milligrams

1/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 14 February 2011 would be coded as 1045). The Julian code shall represent the day the product was packaged into the pouch and processed. Following the four digit Julian code, the other required code information shall be printed in the sequence as listed above.

(8) The product shall be formulated and labeled in accordance with all FDA labeling regulations and policies. The pouches shall be labeled with the following product name.

CAFFEINATED CHOCOLATE PUDDING

D-3 PACKING

A. Packing. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC-L of ASTM D 5118/D 5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, grade 200 of ASTM D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-5 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/ASQ Z1.4, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQ Z1.4 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 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:

US Army Research, Development and Engineering Command
Natick Soldier Research, Development and Engineering Center
RDNS-CFF
15 Kansas Street
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.

(2) Conformance inspection. Conformance inspection shall include the examinations/tests and methods of inspection cited in this section and in Section 4 of MIL-PRF-44073.

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 document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. 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/ 3/

Category		Defect
Major	Minor	
		Appearance
101		Product not caffeinated chocolate pudding.
	201	Product not smooth or not creamy or not moderately thick.
	202	Product has discernable lumps.
	203	Product not a uniform medium brown color.
	204	Product contains free liquid.
		Odor and flavor
102		Product does not have a sweet chocolate odor.
103		Product does not have a sweet chocolate with slight vanilla flavor.
		Texture
	205	Product not smooth or not creamy or not a moderately thick consistency.
	206	Product has discernable lumps or has chalkiness.
		Net weight
	207	Net weight of an individual pouch less than 4.0 ounces (113 grams). ~~3~~4/

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

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.

3/ The *trans* fat content shall be verified by the NLEA "Nutrition Facts" label. Product not conforming to the *trans* fat content as specified in Section C of this document shall be cause for rejection of the lot.

~~3~~4/ Sample average net weight less than 4.5 ounces (128 grams) shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Commercial sterility shall be verified in accordance with FDA regulations.

(2) Shelf life. The contractor shall provide a Certificate of Conformance that the product has a 36 month 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.

(3) 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 0.1 ounce or to the nearest 1 gram.

(4) 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 (OMA) of AOAC International:

Test	Method Number
Fat	932.06
Caffeine	980.14
Total solids	935.56

Test results for fat and total solids shall be reported to the nearest 0.1 percent. Test results for the caffeine shall be reported to the nearest 1 milligram. Government verification will be conducted through actual testing by a Government laboratory. Any nonconforming results shall be cause for rejection of the lot.

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

A. Packaging.

(1) Pouch material testing. The pouch material shall be examined for the characteristics listed in table I of MIL-PRF-44073 for Type I. The lot size, sample unit, and

inspection level criteria for each of the test characteristics are listed below. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

Characteristic	Lot size expressed in	Sample unit	Inspection level
Oxygen transmission rate	yards	1/2 yard	S-1
Water vapor transmission rate	yards	1/2 yard	S-1
Camouflage	yards	1/2 yard	S-1
Thermal processing	pouches	1 pouch	S-2
Low temperature	pouches	1 pouch	S-2
High temperature	pouches	1 pouch	S-2

(2) Filled and sealed pouch testing. The filled and sealed thermoprocessed or hot-fill processed pouches shall be examined for the characteristics listed in table I of MIL-PRF-44073 for Type I. The lot size, sample unit, and inspection level criteria for each of the test characteristics are listed below. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

Characteristic	Lot size expressed in	Sample unit	Inspection level
Residual gas volume	pouches	1 pouch	S-2
Internal pressure	pouches	1 pouch	S-2 1/
Directional tear, as applicable	pouches	1 pouch	S-2

1/ When a three-seal tester is used, a separate set of samples is required for testing of the closure seal.

(3) Pouch examination. The pouches shall be examined for the defects listed in table II of MIL-PRF-44073 for Type I. The lot size shall be expressed in pouches. The sample unit shall be one thermal processed pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects, and 4.0 for minor defects. Two hundred sample units shall be examined for critical defects. The finding of any critical defect 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 II. 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 II. Shipping container and marking defects

Category		Defect
Major	Minor	
101		Marking missing or incorrect or illegible.
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

Unless otherwise specified, the issues of these documents are those active on the date of the solicitation or contract.

DSCP FORMS

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

MILITARY SPECIFICATIONS

MIL-PRF-44073	Packaging of Food in Flexible Pouches

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) www.asq.org

ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes

ASTM INTERNATIONAL www.astm.org

D 1974	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D 4727/D 4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
D 5118/D 5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International

PCR-C-081
18 February 2010

For DLA Troop Support Website Posting

RDNS-SEC-EM 7 March 2017

TO: Defense Logistics Agency (DLA) - Troop Support – Subsistence DSCP-FTRE

SUBJECT: ES17-026 (DSCP-SS-17-00638); Document change request; change the fat content requirement by adding a *Trans* Fat Free requirement to PCR-C-081, Caffeinated Chocolate Pudding, Packaged in a Flexible Pouch, Shelf Stable; for use in Menus 6 and 9; ACR-F-08, First Strike Ration® (FSR), Assembly Requirements.

1. Natick has initiated an Engineering Support change to incorporate a new requirement for *Trans* Fat Free in PCR-C-081, Caffeinated Chocolate Pudding, Packaged in a Flexible Pouch, Shelf Stable.

2. Research indicates that there may be a correlation between dietary intake of Trans Fatty Acid (TFA) and coronary heart disease (CHD), weight control, inflammatory response and immune dysfunction. TFAs are formed when liquid oils are made into solid fats like shortening and hard margarine. However, a small amount of TFAs are found naturally, primarily in animal-based foods, including beef, butter and milk, although most TFAs in the diet come from partially hydrogenated oils.

3. CFD initiated research to assess the occurrence and reduction of TFAs in combat ration components. Based on these findings, Natick recommends the addition of a requirement for Caffeinated Chocolate Pudding to have a *trans* fat content not greater than 0 grams per serving.

4. The recommended change will not impact other standards related to product and performance, which will continue to be required to be met satisfactorily.

5. The Service Representatives were contacted and their replies were:

Army: Concurs with Natick
Marine Corps: Concurs with Natick
Navy: No reply, yet
Air Force: Concurs with Natick

6. Natick submits the following changes to the subject documents for all current, pending and future procurements until the document is formally amended or revised.

a. page 2, Paragraph C-2, I, (1) Fat content., after first sentence, insert "The *trans* fat content shall be not greater than 0 grams per serving."

b. page 6, Paragraph E-5, TABLE I, Header, insert a new footnote "3/".

c. page 6, Paragraph E-5, TABLE I, minor defect 207, delete footnote "3/" insert footnote "4/".

d. page 6, Paragraph E-5, TABLE I, Footnotes, after footnote 2/, insert the following new footnote "3/ The *trans* fat content shall be verified by the NLEA "Nutrition Facts" label. Product not conforming to the *trans* fat content as specified in Section C of this document shall be cause for rejection of the lot." Renumber footnote 3/ to 4/.