PCR-C-039
W/Change 04 27 Sep 13
3 September 2004

SECTION C

This document covers fortified cheddar cheese spread packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-C-039, CHEESE SPREAD, CHEDDAR, FORTIFIED, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Types.

Type I -	Plain
Type II -	With Jalapeno Peppers
Type III -	With Bacon
Type IV -	With Pizza Flavor

Packages.

Package A -	Meal, Cold Weather (MCW)
Package B -	Food Packet, Long Range Patrol (LRP)
Package C -	Meal, Ready-To-Eat (MRE)
Package J -	First Strike Ration (FSR)

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. Commercial sterility. The packaged food shall be thermally processed until commercially sterile in accordance with 21 Code of Federal Regulations (CFR) Part 113, Thermally Processed, Low Acid Food's Packaged in Hermetically Sealed Containers.

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

D. Appearance.

(1) General. The product shall show no evidence of excessive heating (materially darkened or scorched), mottling, curdling, or oiling off. The packaged food shall be free from foreign materials.

(2) Type I. The plain Cheddar cheese spread shall be smooth, homogenous, slightly plastic, light yellow-orange color (between No. 6 and No. 10 of the National Cheese Institute Color Standard), and shall have a uniform surface sheen.

(3) Type II. The Cheddar cheese spread with jalapeno peppers shall be smooth, homogenous, slightly plastic, light yellow-orange color, and shall have a uniform surface sheen. The product may possess a green/grey hue and shall contain small specks of green jalapeno pepper uniformly dispersed throughout.

(4) Type III. The Cheddar cheese spread with bacon shall be smooth, homogenous, slightly plastic, light yellow-orange color, and shall have a uniform surface sheen. The product shall contain small pieces of brown to reddish brown bacon uniformly dispersed throughout.

(5) Type IV. The Cheddar cheese spread with pizza flavor shall be smooth, homogenous, slightly plastic, light yellow-orange color (between No. 6 and No. 10 of the National Cheese Institute Color Standard), and shall have a uniform surface sheen.

E. Odor and flavor.

(1) General. The Cheddar cheese spread shall be free from foreign odors and flavors. Slight bitterness may be evident in medium cured cheese.

(2) Type I. The plain Cheddar cheese spread shall have a medium cured cheddar cheese and cooked milk odor and a medium cheddar, salty, buttery flavor.

(3) Type II. The Cheddar cheese spread with jalapeno peppers shall have a medium cured cheddar, slightly buttery, and jalapeno odor. The product shall have a medium cheddar, salty, slightly buttery, and a pronounced jalapeno flavor. The product shall impart a moderate heat or mouth burning sensation.

(4) Type III. The Cheddar cheese spread with bacon shall have a medium cured cheddar, slightly buttery, slightly meaty, and slightly smoky odor. The product shall have a medium cheddar, slight buttery, salty, slightly meaty, and slightly smoky flavor.

(5) Type IV. The Cheddar cheese spread with pizza flavor shall have a medium cured cheddar, pepperoni, Italian spice, cooked milk, odor and flavor. The pizza flavored cheese spread may have a salty, butter flavor.

F. Texture. The Cheddar cheese spread, after the pouch has been kneaded, shall have a smooth, homogenous, slightly plastic, and easily spreadable texture. The cheese spread shall not have a grainy (sandy) texture.

G. Emulsion stability. The product shall show no evidence of emulsion separation.

H. Weight. The average net weight shall be not less than 1.5 ounces. No individual pouch shall have a net weight of less than 1.4 ounces.

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

J. Analytical requirements.

(1) Fat content. The fat content shall be not less than 38.0 percent and not greater than 43.0 percent.

(2) Salt content. The salt content shall be not less than 1.6 percent and not greater than 2.2 percent for Types I, II and IV. The salt content shall be not less than 1.8 percent nor greater than 3.5 percent for Type III.

(3) Moisture content. The moisture content shall be not less than 38.0 percent and not greater than 42.0 percent.

(4) pH level. The pH shall be not less than 5.5 and not greater than 5.9.

(5) Vitamin A content. The vitamin A content shall be not less than 800 Retinol Equivalents (RE) per pouch.

(6) Vitamin B_1 content (thiamine hydrochloride). The vitamin B_1 content shall be not less than 0.80 mg per pouch.

(7) Vitamin B_6 content (pyridoxine hydrochloride). The vitamin B_6 content shall be not less than 1.0 mg per pouch.

(8) Vitamin D content. The vitamin D content shall be not less than 2.0 ug per pouch.

(9) Calcium content. The calcium content shall be not less than 150 mg per pouch.

K. Ingredients. Ingredients shall be as follows:

(1) Cheddar cheese. The quantity of milled/shredded medium cured cheddar cheese used shall be in accordance with the Definitions and Standards of Identity under the Federal Food, Drug and Cosmetic Act for pasteurized process cheddar cheese spread (21 CFR Part 133.176) or pasteurized cheese spread with fruits, vegetables or meats (21 CFR Part 133.176).

(2) Butter or plastic cream. Butter or plastic cream, or a combination of both, shall be used as a fat standardizing ingredient. Milled cheese and butter or plastic cream, or a combination of both, shall be blended together in a steam jacketed vat, kettle, or laydown cooker. The mixture shall be heated to a temperature not to exceed 180^{o}F while constantly stirring until the cheese and butter have completely melted. Scorching of the mixture shall be avoided.

(3) Water. The amount of water used is dependent on the moisture content of the cheddar cheese, butter, and jalapeno peppers (type II only) and the amount of moisture lost during processing. The water may be added in several aliquots during the blending process. The water shall be used to dissolve the stabilizers, emulsifying agents, salts, and other powdered ingredients.

(4) Stabilizer. Not more than 0.30 percent by weight of the finished product.

(5) Emulsifying agents. Not less than 1.90 percent nor more than 3 percent by weight (anhydrous salts) of the finished product.

(6) Mono and diglycerides. Not more than 0.50 percent by weight of the finished product.

(7) Salt. The amount of salt in the formula is dependent upon the salt content in the cheese and butter and jalapeno peppers (type II only). The total salt shall comply with the product requirements.

(8) Cheese coloring. Cheese coloring compounds shall be specifically designed for

coloring butter and cheese. Cheese coloring shall be added as necessary so that the finished product will conform to the color requirement.

(9) Vitamins. Vitamin A, thiamine hydrochloride (vitamin B_1), pyridoxine hydrochloride (vitamin B_6), and vitamin D shall be added to the cheese spread in such quantity to comply with the product requirements.

(10) Acidifying agent. The acidifying agent shall be added after all ingredients have been blended and in a quantity to achieve a pH that complies with the finished product requirements.

(11) Jalapeno peppers. The amount of jalapeno peppers (pepper solids and liquid brine) used in type II product shall be of sufficient quantity to achieve a finished product flavor and odor.

(12) Bacon bits. The amount of bacon bits used in type III product shall be of sufficient quantity to achieve a finished product flavor and odor. 1/

1/ Bacon Bits EDP #34743 manufactured by Hormel Foods, Corp., Austin, Minnesota 55912 performs satisfactorily in this product.

L. Formulation. Formulations are as follows:

(1) Type I. Cheddar cheese, butter or plastic cream, water, stabilizer, emulsifying agents, mono and diglycerides, salt, cheese color, vitamins, acidifying agent.

(2) Type II. In addition to the ingredients listed for type I product, jalapeno peppers are included.

(3) Type III. In addition to the ingredients listed for type I product, bacon pieces cured with water, salt, sodium erythorbate, and sodium nitrite are included. The bacon pieces may also contain sugar, dextrose, brown sugar, sodium phosphates, potassium chloride, and flavoring.

(4) Type IV. In addition to the ingredients listed for type I product, natural pizza flavors are included.

M. Preparation and processing. Processing shall be on a continuous basis.

(1) Preparation of the cheddar cheese. The cheese spread shall be produced from Cheddar cheese (except for finish and appearance) U.S. Grade A medium cured or better.

The finish and appearance shall be U.S. Grade B medium cured or better. The Cheddar cheese shall be at least 90 days old at time of use and may be colored or uncolored. The medium cured cheddar cheese shall be trimmed and cleaned, as necessary, to remove all rind, wax, mold, or any other objectionable materials from the surface. The trimmed and cleaned cheddar cheese shall be milled or shredded. The milling or shredding of the cheese may be accomplished up to 24 hours prior to the preparation of the cheese spread. The milled/shredded cheese shall be protected from contamination in the clean covered containers and shall be held under refrigeration until time of use.

(2) Preparation of the cheese spread. The cheese spread shall be prepared using the quantities of ingredients indicated based on the weight of the finished cheese spread and by blending the ingredients in accordance with an established process schedule or a method which results in cheese spread complying with the product requirements.

(3) Thermal processing. The cheese spread after blending shall be thermally processed in accordance with 21 CFR Part 113, Thermally Processed, Low-Acid Foods Packaged in Hermetically Sealed Containers.

a. Records of processing temperatures. Recording charts of all heating and cooling times and temperatures, regardless of type of system used, shall be maintained. The charts shall be taken from recorders, which have been accurately calibrated in the applicable temperature range and time recording function. The recording clock time and actual time shall be synchronized during all processing operations. The charts shall also include the date, plant identification, operator, contract number, lot number, and product being run (for example, startup water, product, and post rinses). The charts shall be maintained for three years and shall be made available for review by the government inspector.

b. Continuity of preparation, processing, and packaging. The cheese spread shall be prepared, processed, and filled into a pouch in a continuous manner with minimum delay between the various stages.

(4) Pouch filling and sealing. The cheese spread shall be aseptically filled (hot-filled) at 170^{o} to 180^{o}F into a pouch, fabricated and constructed as specified in D-1,A(1), nitrogen flushed and sealed immediately after filling. If the cheese spread is not filled using an aseptic filler, all filling operations shall be conducted in a filling room maintained in a “clean room” condition.

(5) Filled pouch cooling temperature requirements. The filled and sealed pouch of cheese spread shall be water cooled, air cooled or a combination of both, sufficiently to ensure that the product temperature in the center of the pouch shall be below 100^{o}F prior to

packing for shipment to ration assembler. If water cooling is utilized, the pouches shall be thoroughly dry before packing.

SECTION D

D-1 PACKAGING

A. Packaging. One and one half ounces of cheese spread shall be filled into a pouch as described below.

(1) Pouches.

a. Pouch material. The pouches shall be fabricated from 0.002 inch thick polyolefin film laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then laminated to 0.0005 inch thick polyester. The three plies shall be laminated with the polyester on the exterior of the pouch. All tolerances for thickness of pouch material shall be plus or minus 20 percent. The polyolefin layer of bag material shall be suitably formulated for hot fill or post-fill processing. 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. For package A (MCW), the exterior surface of the pouch shall be colored white with a color in the range of 37778 through 37886 of FED-STD-595, Colors Used in Government Procurement. For package B (LRP), package C (MRE), and package J (FSR), the 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 style pouch having maximum inside dimensions of 2-7/8 inches wide by 5-3/8 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The heat seals shall be made in a manner that will assure hermetic seals. The side and bottom seals 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 or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c. A tear nick, a tear notch or serrations shall be provided on one outside edge or two opposite outside edges of the pouch to facilitate opening of the filled and sealed pouch. Excess pouch material at the edges of the pouch shall not exceed 3/16 inch. A 1/8 inch wide lip may be incorporated at the open end of the pouch to facilitate opening and filling of the pouch.

c. Pouch filling and sealing. One and one half ounces of cheese spread shall be filled into the pouch, nitrogen flushed and the pouch sealed. 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 or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c. The pouch shall show no aberration in the pouch material or heat seals. Filled and sealed pouches showing aberrations shall withstand a minimum internal pressure of 17 pounds per square inch gauge (psig) for 30 seconds when tested in accordance with E-6,A,(4),c to verify package integrity. Not less than 24 hours after hot-filling, the pouches shall withstand an internal pressure of 17 psig for 30 seconds without rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less 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 type 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) KNEAD PACKAGE BEFORE OPENING

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, 30 October 2006 would be coded as 6303. 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 (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.

(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 five (5) 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 product examination 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 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. The pouches shall be kneaded prior to conducting any portion of the product examination.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
Major	Minor	
		Appearance
101		Product not fortified cheese spread, Type I or Type II or Type III, or Type IV.
102		Evidence of excessive heating (materially darkened or scorched), mottling, curdling, or oiling off.
103		Type I or Type II, Type III or Type IV cheddar cheese spreads not a smooth, not homogenous, or not slightly plastic appearance.
	201	Type I, plain cheddar cheese spread, not a light yellow-orange color or does not have a uniform surface sheen.
	202	Type II, cheddar cheese spread with jalapeno peppers does not have a light yellow-orange color or does not have a uniform surface sheen.
	203	Type II product does not have specks of green jalapeno uniformly dispersed throughout.
	204	Type III, cheddar cheese spread with bacon does not have a light yellow-orange color or does not have a uniform surface sheen.
	205	Type III product does not have brown to reddish-brown pieces of bacon uniformly dispersed throughout.
	206	Type IV, cheddar cheese spread with pizza flavor does not have a light yellow-orange color or does not have a uniform surface sheen.
		Odor and flavor
104		Type I, plain cheddar cheese spread not a medium cured cheddar or not a cooked milk odor.
105		Type I, plain cheddar cheese spread not a medium cheddar, not salty, or not a buttery flavor.

TABLE I. Product defects cont'd 1/ 2/ 3/ - Continued

Category		Defect
Major	Minor	
106		Type II, cheddar cheese spread with jalapeno peppers not a medium cured cheddar, not slightly buttery, or not a jalapeno odor.
107		Type II, cheddar cheese spread with jalapeno peppers not a medium cheddar, not salty, not slightly buttery, or not a pronounced jalapeno flavor.
108		Type II, cheddar cheese spread with jalapeno peppers does not impart a moderate heat or mouth burning sensation.
109		Type III, cheddar cheese with bacon not a medium cured cheddar, not slightly buttery, not slightly meaty, or not a slightly smoky odor.
110		Type III, cheddar cheese with bacon not a medium cheddar, not slightly buttery, not salty, not slightly meaty, or not a slightly smoky flavor.
111		Type IV, cheddar cheese with pizza flavor not a medium cured cheddar, not pepperoni, not Italian spice, not cooked milk odor or flavor.
		Texture
112		Type I or Type II or Type III or Type IV cheddar cheese spreads not smooth, not homogenous, slightly plastic, or not an easily spreadable texture after kneading.
113		Cheese spread exhibits a grainy (sandy) texture.
		Weight
	207	Net weight of an individual pouch less than 1.4 ounces. 4/

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.

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/ Grade and age requirements of Cheddar cheese shall be verified by USDA Grade certificate.

4/ Sample average net weight of less than 1.5 ounces 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 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.

(3) 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 0.1 ounce.

(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 of AOAC International (OMA).

Test	Method Number
Fat	933.05
Salt	935.43, 983.14
Moisture	926.08
pH	981.12

Test results shall be reported to the nearest 0.1 percent for fat, salt, and moisture. Test results for pH shall be reported to the nearest 0.1 unit. Any result not conforming to the analytical requirements specified in shall be cause for rejection of the lot. Verification will be conducted through actual testing by a Government laboratory.

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

Test	Method Number
Vitamin A 1/	~~992.06 or 15.15 2/~~ 2001.13
Vitamin B_1 1/	986.27 ~~or Thiamine 3/~~
Vitamin B_6 1/	985.32, or 2004.07~~or Pyridoxine 3/~~
Vitamin D 1/	979.24, or 2002.05
Calcium	985.35, or 2011.14

Test results shall be reported to the nearest milligram, ~~or~~ microgram, or IU, as applicable. Any nonconforming result shall be cause for rejection of the lot.

1/ Tests will be conducted for Vitamins A, B_1, B_6, D, and Calcium 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.

~~2/ Vitamins A and D in Milk Products in Chapter 15 of Standard Methods For The Examination Of Dairy Products, 16th Edition, 1992.~~

~~3/ Simultaneous Analysis of Niacin, Niacinamide, Pyridoxine, Thiamin, and Riboflavin, Page 87, Methods of Vitamin Assay, 4th Edition.~~

(5) Emulsion stability. Eight filled and sealed pouches shall be randomly selected from each lot and individually tested for emulsion stability. The samples shall not be kneaded any time during the temperature cycle test. Any nonconforming result shall be cause for rejection of the lot. The filled and sealed pouches shall be tested as follows:

a. Hold for 2 days at a temperature of -20°F ± 5°F.

b. Remove from -20°F and hold for 2 days at 70°F ± 5°F.

c. Remove from 70°F and hold for 2 days at 100°F ± 5°F.

d. Cool to 70°F ± 5°F and examine for emulsion separation. Examination for emulsion separation shall be performed on samples which have not been kneaded.

(6) Pouch filling and sealing. The nitrogen flush process shall be verified by the USDA on the first production lot. A CoC will be provided on all future lots. If a new contract starts, then USDA will verify the nitrogen flush process again.

Comment [RDNS-CFF1]: ES13-041 (DSCP-SS-13-01015), 27 Sep 13, p. 14, E-5, B(4) Analytical, Vitamin A Test Method Number, delete "992.06 or 15.15 2/".and insert "2001.13".

Comment [RDNS-CFF2]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, p. 14, E-5, B(4) Analytical, Vitamin B_1 Test Method Number, after "986.27" delete "or Thiamin 3/".

Comment [RDNS-CFF3]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, 6 Sep 13, p. 14, E-5, B(4) Analytical, Vitamin B_6 Test Method Number, after "985.32" insert ", or 2004.07" and delete "or Pyridoxine 3/".

Comment [RDNS-CFF4]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, p. 14, E-5, B(4) Analytical, Vitamin D 1/ Test Method Number, after "979.24" insert ", or 2002.05".

Comment [RDNS-CFF5]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, p. 14, E-5, B(4) Analytical, Calcium Test Method Number, after "985" insert ", or 2011.14".

Comment [RDNS-CFF6]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, p. 14, E-5, B(4) Analytical, Below the table.
Line 1, after "milligram" insert "," and delete "or". After "microgram," insert "or IU,"…..

Comment [RDNS-CFF7]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, p. 14, E-5, B(4) Analytical, delete footnote "2/ Vitamins A and D in Milk Products in Chapter 15 of Standard Methods For The Examination Of Dairy Products, 16th Edition, 1992."

Comment [RDNS-CFF8]: ES13-041 (DSCP-SS-13-01015) 27 Sep 13, p. 14, E-5, B(4) Analytical, delete footnote "3/ Simultaneous Analysis of Niacin, Niacinamide, Pyridoxine, Thiamin, and Riboflavin, Page 87, Methods of Vitamin Assay, 4th Edition."

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. 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 D2103-03 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 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. When deemed necessary by the USDA, testing of the unfilled 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. The finding of any critical defect shall be cause for rejection of the lot.

TABLE II. Filled and sealed pouch defects 1/

Category			Defect
Critical	Major	Minor	
1			Swollen pouch.
2			Aberrations in pouch material or heat seals resulting from heat sealing, pouch fabrication, hot filling or heat processing that reduce the effective closure seal width to less than 1/16 inch. 2/
3			Tear, hole, or open seal.
	101		Seal width less than 1/16 inch. 3/
	102		Presence of delamination. 4/
	103		Unclean pouch. 5/
	104		Pouch has foreign odor.
	105		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 6/
	106		Not packaged as specified.
		201	Label missing, incorrect, or illegible.
		202	Tear notch or serrations missing or does not facilitate opening.
		203	Seal width less than 1/8 inch but greater than 1/16 inch.
		204	Presence of delamination. 4/
		205	Excess pouch material at edges exceeds 3/16 inch.

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

2/ Aberrations in pouch material or heat seals include:

a. Major fold-over wrinkles or severe wrinkles, that extend into heat seal area and reduce effective seal width to less than 1/16 inch; or

b. Severe wrinkles in the body of the pouch along the inside edges of the heat seals.

Pouches exhibiting one or more of these aberrations shall be tested in accordance with E-6,A,(4),c.

3/ 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.

4/ 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.

5/ 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.

6/ 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, as applicable.

a. Unfilled pouch seal testing. The seals of the unfilled pouch shall be tested for seal strength in accordance with ASTM F88-00, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one unfilled pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent 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 three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F88-00. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on pouches, three adjacent specimens shall be cut from each side and each end 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 a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

c. 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 bottom seals of the pouch. For testing the closure seal, the bottom seal 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 17 psig pressure is reached. The 17 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.

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 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

FEDERAL STANDARD

FED-STD-595 Colors Used in Government Procurement

GOVERNMENT PUBLICATIONS

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

U.S. Standards for Grades of Cheddar Cheese

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 Boxes
D2103-03	Standard Specification for Polyethylene Film and Sheeting
D5118/D5118 M-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 AOAC International

NATIONAL CHEESE INSTITUTE COLOR STANDARD

PCR-C-039
W/Change 04 27 Sep 13
3 September 2004

For DLA Troop Support Website Posting

RDNS-CFF 27 September 2013

TO: DLA Troop Support – Subsistence DSCP-FTRE

SUBJECT: ES13-041 (DSCP-SS-13-01015); Specification update; PCR-C-039 Cheese Spread, Cheddar, Fortified, Packaged in a Flexible Pouch, Shelf Stable; Update Vitamin A, Vitamin B1, Vitamin B6, Vitamin D, and Calcium

1. DLA completed a review of the testing requirements in subject document and found methods that are out of date, wrong, or allow for tests which cannot determine the applicable requirement. DLA submitted their findings to USDA for review. The USDA S&T laboratory has reviewed the testing requirements for Vitamin A, Vitamin B1, and Vitamin B6 in subject document and concurs with DLA's recommended changes.

2. Natick submits the following change to subject document for all current, pending, and future procurements until the document is formally amended or revised:

(1) Paragraph E-5, B(4) Analytical.
Reference: Vitamin A 1/: delete "992.06 or 15.15 2/" insert "2001.13

(2) Paragraph E-5, B(4) Analytical.
Reference: Vitamin B1 1/: after "986.27," delete "or Thiamin 3/"

(3) Paragraph E-5, B(4) Analytical.
Reference: Vitamin B6: after "985.32" insert ", or 2004.07" and delete "or Pyrodoxine 3/"

(4) Paragraph E-5, B(4) Analytical.
Reference: Vitamin D 1/: after "979.24" insert ", or 2002.05"

(5) Paragraph E-5, B(4) Analytical.
Reference: Calcium: after "985.35" insert ", or 2011.14"

(6) Paragraph E-5, B(4) Analytical.
Line 1, after "milligram" insert "," and delete "or". After "microgram," insert "or IU,"

(7) Paragraph E-5, B(4) Analytical.
Delete footnote "2/ Vitamins A and D in Milk Products in Chapter 15 of Standard Methods For The Examination Of Dairy Products, 16th Edition, 1992."

(8) Paragraph E-5, B(4) Analytical.
Delete footnote "3/ Simultaneous Analysis of Niacin, Niacinamide, Pyridoxine, Thiamin, and Riboflavin, Page 87, Methods of Vitamin Assay, 4th Edition."

3. Attached is Change 04, PCR-C-039 Cheese Spread, Cheddar, Fortified, Packaged in a Flexible Pouch, Shelf Stable 27 September 2013, with the changes highlighted.