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SUPERSEDING
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SECTION C

This document covers shelf stable 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-039B, CHEESE SPREAD, CHEDDAR, FORTIFIED, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Flavors.

Flavor 1 - Plain
Flavor 2 - With Jalapeno peppers
Flavor 3 - With Bacon

C-2 PRODUCT 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 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 noncomparable 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.

(1) General. The cheddar cheese spread shall be smooth, homogenous, slightly plastic, light to medium yellow-orange color (between No. 6 and No. 10 of the National

Cheese Institute Color Standard) and shall have a uniform surface sheen. The finished product shall show no evidence of mottling, curdling, oiling off or excessive heating (materially darkened or scorched). The finished product shall be free from foreign materials.

(2) Flavor 2. The cheddar cheese spread with jalapeno peppers shall have small green colored jalapeno pepper pieces distributed throughout and may have small seeds.

(3) Flavor 3. The cheddar cheese spread with bacon shall have small reddish-brown colored bacon pieces distributed throughout.

E. Odor and flavor.

(1) General. The packaged food shall have a medium cured cheddar and a slightly buttery odor and flavor and a salty flavor. The packaged food shall be free from foreign odors and flavors.

(2) Flavor 2. The cheddar cheese spread with jalapeno peppers shall have a moderate jalapeno odor and flavor and shall elicit a sensation of moderate heat.

(3) Flavor 3. The cheddar cheese spread with bacon shall have a smoky bacon odor and flavor.

F. Texture.

(1) General. The cheddar cheese spread, after the pouch has been kneaded, shall be smooth, homogenous, and easily spreadable. The cheddar cheese spread shall not be grainy.

(2) Flavor 2. The cheddar cheese spread with jalapeno peppers shall have small, soft jalapeno pepper pieces.

(3) Flavor 3. The cheddar cheese spread with bacon shall have bacon pieces that are soft to slightly firm and may be chewy.

G. Net weight. The net weight of an individual pouch shall be not less than 28 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. The fat content shall be not less than 38.0 and not greater than 43.0 percent.

(2) Salt. For flavors 1 and 2, the salt content shall be not less than 1.6 and not greater than 2.2 percent. For flavor 3, the salt content shall be not less than 1.8 and not greater than 3.5 percent.

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

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

(5) Vitamin A. The vitamin A content shall be not less than 2350 and not greater than 2850 International Units (IU) per 100 grams of product.

(6) Vitamin D3. The vitamin D3 content shall be not less than 4.6 and not greater than 5.6 micrograms per 100 grams of product.

(7) Calcium. The calcium content shall be not less than 350 and not greater than 425 milligrams per 100 grams of product.

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

K. Ingredients and preparation.

(1) Cheddar cheese. The cheddar cheese spread shall be produced from cheddar cheese (except for finish and appearance) U.S. Grade A medium cured or better or bulk U.S. Extra Grade medium cured. 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 clean covered containers and shall be held under refrigeration until time of use. 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 133.179) 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°F while constantly stirring until the cheese and butter have completely melted. Scorching of the mixture shall be avoided.

(3) Stabilizer. Not greater than 0.30 percent by weight of the finished product.

(4) Emulsifying agents. Not less than 1.90 percent and not greater than 3.00 percent by weight (anhydrous salts) of the finished product.

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

(6) 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.

(7) 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.

(8) Vitamin and mineral fortification. Vitamin A, vitamin D3, and calcium shall be added to the cheddar cheese spread in such quantity to comply with the product requirements.

L. Processing. Processing shall be on a continuous basis.

(1) Thermal processing. The cheddar cheese spread, after blending, shall be thermally processed in accordance with 21 Code of Federal Regulations (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 cheddar cheese spread shall be prepared, processed, and filled into a pouch in a continuous manner with minimum delay between the various stages.

(2) Pouch filling and sealing. The cheddar cheese spread shall be aseptically filled (hot-filled) into a pouch, fabricated and constructed as specified in D-1,A(1), nitrogen flushed and sealed immediately after filling. If the cheddar 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.

(3) Filled pouch cooling temperature requirements. The filled and sealed pouch of cheddar 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°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. The product shall be packaged in a barrier pouch as described below.

(1) Pouch.

a. Pouch material. The pouch 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. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent.

The polyolefin layer shall be suitably formulated for hot fill or post-fill processing. The material shall show no evidence of delamination, degradation, or foreign odor. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product. The complete exterior surface of the pouch shall be uniformly colored and shall conform to number 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of SAE AMS-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat style pouch having maximum outside dimensions of 2-7/8 inches wide by 5-3/4 inches long. The pouch shall be made by heat sealing three edges with 1/4 inch (-1/8 inch, +1/4 inch) wide seals. The pouch shall show no aberration in the pouch material or heat 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. A tear nick, notch, or serrations shall be provided 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.

c. Pouch filling and sealing. The product shall be filled into the pouch, nitrogen flushed and sealed. The pouch shall show no aberration in the pouch material or closure seal. The closure seal shall be free of 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.

D-2 LABELING

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

(1) Name and flavor of product (letters not less than 1/8 inch high)
(2) Ingredients
(3) Date 1/
(4) Net weight
(5) 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) Directions: KNEAD PACKAGE BEFORE OPENING

1/ Each pouch shall have the date of pack noted by using either a four-digit code or five-digit code. When using the four-digit code, begin with the final digit of the current year followed by the three-digit Julian code. For example, 14 February 2050 would be coded as 0045. When using the five-digit code, begin with the decade digit of the current year followed by the three-digit Julian code. For example, 14 February 2050 would be coded as 50045. The Julian code shall represent the day the product was packaged into the pouch.

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 D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, minimum burst grade 200 or ECT 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, 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 DLA Troop Support 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 appearance, odor, flavor, and texture. Any failure to conform to the product requirements or any appearance or palatability failure shall be cause for rejection of the lot.

(2) Periodic review evaluation. 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:

COMBAT CAPABILITIES DEVELOPMENT COMMAND (DEVCOM) SOLDIER CENTER
FCDD-SCD-SCR
10 GENERAL GREENE AVENUE
NATICK, MA 01760-5000

One lot shall be randomly selected during each calendar month of production or as otherwise specified in the contract. Three (3) sample units shall be randomly selected from that one production lot. The three (3) sample units shall be shipped to DEVCOM Soldier Center within five (5) working days from the end of the production month from which they are randomly selected and upon completion of all USDA inspection requirements. The sample

units will be evaluated for overall quality against the current first article or product demonstration model.

(3) Conformance inspection. Conformance inspection shall include the examinations/tests 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 Product 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. 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 cheddar cheese spread or not flavor specified.
102		Evidence of mottling or curdling or oiling off or excessive heating (materially darkened or scorched).
	201	Cheddar cheese spread not smooth or not homogenous or not a slightly plastic appearance.
	202	Cheddar cheese spread, not a light to medium yellow-orange color (between No. 6 and No. 10 of the National Cheese Institute Color Standard) or does not have a uniform surface sheen.

TABLE I. Product defects 1/ 2/ 3/ - Continued

Category		Defect
Major	Minor	
	203	Flavor 2 cheddar cheese spread with jalapeno peppers does not have small or not green colored jalapeno pepper pieces or not distributed throughout.
	204	Flavor 3 cheddar cheese spread with bacon does not have small or not reddish-brown colored bacon pieces or not distributed throughout.
		Odor and flavor
103		Packaged food does not have a medium cured cheddar or not a slightly buttery odor or flavor or not a salty flavor.
104		Flavor 2 cheddar cheese spread with jalapeno peppers does not have a moderate jalapeno odor or flavor or does not elicit a sensation of moderate heat.
105		Flavor 3 cheddar cheese spread with bacon not a slightly smoky or not a bacon odor or flavor.
		Texture
	205	Cheddar cheese spread not smooth or not homogenous or not easily spreadable after kneading.
	206	Cheddar cheese spread is grainy.
	207	Flavor 2 cheddar cheese spread with jalapeno peppers does not have small or not soft jalapeno pepper pieces.
	207~~7~~8	Flavor 3 cheddar cheese spread with bacon does not have soft to slightly firm bacon pieces.

TABLE I. Product defects 1/ 2/ 3/ - Continued

Category		Defect
Major	Minor	
		Net weight
	2089	Net weight of an individual pouch less than 28 grams.

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

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 quality 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 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 one 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	933.05, 2007.04, or 2008.06
Salt	935.47 or 971.27
Moisture	925.45D, 2007.04, or 2008.06
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. Government verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirement shall be cause for rejection of the lot.

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

Test	Method Number
Vitamin A 1/	2001.13, 2011.07, or 992.06
Vitamin D3 1/	979.24, 2002.05, or 2011.11
Calcium 1/	985.35, 2011.14 2/, or 2011.19

Test results shall be reported to the nearest IU, microgram or milligram as applicable. Any result not conforming to the vitamin and mineral requirement shall be cause for rejection of the lot.

1/ Tests will be conducted by the contractor for vitamins A, D3, and calcium on the first production lot and USDA will perform verification testing and verify the formula. A Certificate of Conformance (CoC) 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 (CoA) will be provided and USDA will verify the formula.

2/ ICP-MS may be used.

(5) Emulsion stability. Eight filled and sealed pouches shall be randomly selected by USDA from each lot and individually tested for emulsion stability. The samples shall not be

kneaded at any time during the temperature cycle test. The contractor will subject the pouches to the temperature cycles and present the pouches to USDA. USDA will evaluate the samples and record the results. 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 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.

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

A. Packaging.

(1) Pouch material certification. The pouch material shall be tested for these characteristics. A CoC may be accepted as evidence that the characteristics conform to the specified requirements.

Characteristic	Requirement paragraph	Test procedure
Thickness of films for laminated material	D-1,A(1)a	ASTM D2103 1/
Aluminum foil thickness	D-1,A(1)a	ASTM B479 2/
Laminated material identification and construction	D-1,A(1)a	Laboratory evaluation
Color of laminated material	D-1,A(1)a	SAE AMS-STD-595 3/

1/ Standard Specification for Polyethylene Film and Sheeting

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

3/ Colors Used in Government Procurement

(2) 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 acceptable quality level (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. All exterior surfaces and edges of the filled and sealed pouch shall be examined visually for product leakage, width of seals, and delamination while applying a manual kneading action which forces the product against the interior surface in the area being observed. Alternatively, all surfaces and edges of the filled and sealed pouch may be visually examined for product leakage, width of seals, and delamination by placing them in a vacuum chamber, dry desiccator, or similar apparatus, and subjecting them to a vacuum of 15 inches of mercury (atmospheric pressure is 29.9 inches of mercury) for 30 seconds. Any pouch that does not swell to form a tightly distended package having at least one distorted edge during the test shall be recorded as a leaker and shall be cause for rejection of the lot. After vacuum testing, the pouches shall be visually inspected for table II defects.

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 or hole or open seal.
	101		Seal width less than 1/16 inch. 3/

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

Category			Defect
Critical	Major	Minor	
	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 or incorrect or illegible.
		202	Tear nick or notch or serrations missing or does not facilitate opening.
		203	Seal width less than 1/8 inch but greater than or equal to 1/16 inch. 3/
		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/ Pouches exhibiting one or more of these aberrations shall be tested in accordance with E-6,B,(1),b:

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. Entrapped matter that extends into heat seal area and reduces effective seal width to less than 1/16 inch; or

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

3/ Effective seals are defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, 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 in the body of the pouch 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 - 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. 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).

6/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the seal surface that could conceal or impair visual detection of seal defects, score the impression and/or design as a major defect, retain the sample, and contact the Government agency supervisor or the contracting officer for instruction. Samples shall be furnished to the contracting officer for a determination as to acceptability.

B. Methods of inspection.

(1) Seal testing. The pouch integrity shall be tested as required in a or b, as applicable. The lot shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1.

a. Seal strength test. The seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M. Two adjacent specimens shall be cut from the closure and bottom seals and three adjacent specimens shall be cut from the side seals of each pouch in the sample. The average seal strength of the closure and bottom seals shall be calculated by averaging the two specimens cut from each closure and bottom seals. The average seal strength of the side seals shall be calculated by averaging the three specimens cut from each side seal. 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. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. 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 sides and bottom of the pouch and the distance between restraining plates shall be 1/2 inch. 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 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. Any test failing to reach and maintain 14 psig for 30 seconds during testing shall be considered a test failure. The pouches shall then be examined for separation or yield of the heat seals. Any evidence of seal separation greater than 1/16 inch in the seal shall be considered a test failure. Any seal separation that reduces the effective seal width to less than 1/16 inch shall be considered a test failure. Filled and sealed pouches showing aberrations shall withstand a minimum internal pressure of 17 pounds per square inch gauge (psig). 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 for 30 seconds to verify pouch integrity. Any rupture of the seal or evidence of seal separation that reduces the effective seal width to less than 1/16 inch shall be considered a test failure. Any test failure 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. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Shipping container and marking defects

Category		Defect
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.

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12 August 2024
W/Change 01 23 October 24 ES25-001 (DSCP-SS-25-00022)
SUPERSEDING
PCR-C-039A
24 November 2015

SECTION J REFERENCE DOCUMENTS

Unless otherwise specified, the applicable version of these documents is that which is active on the date of the solicitation or contract.

DLA Troop Support Form

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)

U.S. Standards for Grades of Cheddar Cheese

NON-GOVERNMENTAL STANDARDS

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International

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

B479	Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil For Flexible Barrier, Food Contact, and Other Applications
D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

D2103	Standard Specification for Polyethylene Film and Sheeting
D4727/D4727M	Standard Specification for Corrugated Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials

SAE INTERNATIONAL www.sae.org

SAE AMS-STD-595	Colors Used in Government Procurement