

PCR-S-003A  
13 September 2007  
**Change 01 11 Dec 09**  
SUPERSEDING  
PCR-S-003  
27 February 2004

## **SECTION C**

This document covers scones packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

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

#### **PCR-S-003A, SCONES, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE**

##### Flavors.

- Flavor I – Cinnamon with icing
- Flavor II – Blueberry with icing
- Flavor III – Apple strudel with icing

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

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

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

##### C. Appearance.

(1) General. Eighteen (18) scones shall be arranged in a polymeric tray. The product shall be fully baked and show no evidence of excessive baking (materially darkened or scorched). There shall be no evidence of compression streaks. The scones shall be intact and have a dense, biscuit-like appearance with a light tan to golden brown exterior color. Interior crumb shall have a light tan color. The icing is packaged separately. The product shall be free from foreign materials.

PCR-S-003A  
13 September 2007  
**Change 01 11 Dec 09**  
SUPERSEDING  
PCR-S-003  
27 February 2004

a. Flavor I. The cinnamon scone shall have brown cinnamon chips uniformly dispersed.

b. Flavor II. The blueberry scone shall have blueberry bits uniformly dispersed.

c. Flavor III. The apple strudel scone shall have apple and cinnamon bits uniformly dispersed.

(2) Icing. The icing shall be white in color.

D. Odor and flavor. The packaged food shall be free from foreign odors and flavors.

(1) Flavor I. The cinnamon scones shall have a sweet cinnamon, baking soda, baked wheat flour odor and flavor.

(2) Flavor II. The blueberry scones shall have a sweet blueberry, baking soda, baked wheat flour odor and flavor.

(3) Flavor III. The apple strudel scones shall have a sweet apple, cinnamon, baking soda, baked wheat flour odor and flavor.

(4) Icing. The icing shall have a sweet odor and flavor.

E. Texture. The scones shall be soft, slightly dry, crumbly, dense, and biscuit-like. The icing shall be moist, easily spreadable, and smooth.

F. Net weight. No individual polymeric tray shall have a net weight of less than 36 ounces. The individual net weight of the icing pouch shall be not less than 6.0 ounces.

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

H. Analytical Requirements.

(1) Water activity (Aw). The Aw for the scones (without icing) shall be not greater than 0.850 at 25°C.

PCR-S-003A  
13 September 2007  
**Change 01 11 Dec 09**  
SUPERSEDING  
PCR-S-003  
27 February 2004

(2) Oxygen content. The oxygen content of the filled and sealed polymeric tray shall not exceed 0.3 percent after 72 hours.

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

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

A. Ingredients. Ingredients may be as follows:

(1) Flavor I. Enriched bleached flour (bleached flour, malted barley flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), water, cinnamon drops {sugar, partially hydrogenated vegetable oil (soybean and cottonseed), cinnamon, nonfat dry milk, soy lecithin}, partially hydrogenated soybean and cottonseed oils, sugar, egg, glycerol, may contain 2 percent or less of the following: sodium bicarbonate, sodium aluminum phosphate, salt, artificial flavor, potassium sorbate, calcium propionate, ground cinnamon.

(2) Flavor II. Enriched bleached flour (bleached flour, malted barley flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), water, blueberry flavored fruit pieces {sugar, blueberry juice solids (blueberry juice, blueberry extract), cranberries, sunflower oil}, partially hydrogenated soybean and cottonseed oils, sugar, egg, glycerol, may contain 2 percent or less of the following: sodium bicarbonate, salt, sodium aluminum phosphate, monocalcium phosphate, artificial flavor, potassium sorbate and calcium propionate.

(3) Flavor III. Enriched bleached wheat flour (bleached flour, malted barley flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), water, dried apples (apples, sugar, sunflower oil, ascorbic acid, citric acid), cinnamon drops [sugar, partially hydrogenated vegetable oil (soybean and cottonseed), cinnamon, nonfat dry milk, soy lecithin], partially hydrogenated soybean and cottonseed oils, sugar, glycerol, egg, contains 2 percent or less: leavening (baking soda, sodium aluminum phosphate, monocalcium phosphate), spice, artificial flavor, salt, potassium sorbate and calcium propionate (preservatives).

(4) Icing. Sugar, water, maltodextrin, partially hydrogenated soybean and cottonseed oils, soybean oil, cream, nonfat milk, dextrose, monoglycerides, salt, natural and artificial flavors, citric acid, potassium sorbate and sodium benzoate (preservatives), titanium dioxide (color), agar, guar gum, and lecithin.

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

## **SECTION D**

### **D-1 PACKAGING**

A. **Preservation.** Product as specified plus the appropriate number of oxygen scavengers and ovenable tray insert, if applicable, shall be filled and sealed into polymeric trays **within 4 hours of baking** and the trays shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays, Type II Oven-baked Products. Verification testing and inspection of trays and lids shall be in accordance with Section 4 of MIL-PRF-32004 and the Quality Assurance Provisions of Section E of this Performance-based Contract Requirements document. The requirement for protective sleeves shall not apply to Type II Oven-baked Products.

**Comment [MTF1]:** Natick case ES10-025, change 01, 11 DEC 09 Section D-1, A., line 2, after 'polymeric trays' and before 'and', insert "within 4 hours of baking"

B. **Polymeric tray closure.** The filled and sealed tray shall be securely closed.

C. **Component.** One pouch containing icing shall be provided for each polymeric tray of product. The following materials and processing requirements are for icing in a pouch prior to packaging with the product:

(1) **Icing pouch.**

a. **Material and construction.** The preformed pouch shall be fabricated from material suitably formulated for food packaging and shall be in compliance with all applicable FDA and USDA regulations. The material shall show no evidence of delamination, degradation, or foreign odor when heat-sealed or fabricated into pouches. The material shall not impart an odor or flavor to the product after filling and sealing. The pouch shall be made by heat sealing three edges with 3/8 inch (- 1/8 inch, + 3/16 inch) wide 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,B,(3),a. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the manufacturer's seals to less than 1/16 inch when tested as specified in E-6,B,(3),c. A tear nick, notch or serrations shall be provided to facilitate opening of the filled and sealed pouch.

b. **Filling and sealing.** Six (6.0) ounces of icing shall be filled into the pouch and the filled pouch shall be heat 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

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

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,B,(3),b. Alternatively, the filled and sealed 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 as specified in E-6,B,(3),c. Residual headspace in the filled and sealed pouch shall be minimized to facilitate packing.

c. Pouch size. The filled and sealed pouch shall be a size that fits within the void created between the tray lid material and fiberboard pad added during packing.

D. Oxygen scavenger. The oxygen scavenger shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The oxygen scavenger shall be in compliance with all applicable FDA regulations.

E. Ovenable tray insert. The ovenable tray insert (if utilized) shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The ovenable tray insert shall be in compliance with all applicable FDA and USDA regulations.

## **D-2 LABELING**

A. Polymeric tray body. The polymeric tray body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. One end of the polymeric tray (see figure 1 of MIL-PRF-32004) shall be marked with the product name and number of portions. If the tray body end markings are not readily legible in low light conditions, a small, easily legible label shall be applied, but not over any existing tray markings. All other markings may be applied along the tray body side. The product name, lot number, and filling equipment number shall be applied at the time of tray sealing. 1/

Tray body markings shall include:

- (1) Product name. Commonly used abbreviations may be used.
- (2) Tray code includes: 2/  
Lot Number

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid at the time of tray sealing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body prior to packing for shipment to ration assembler.

2/ 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 2007 would be coded as 7045). The Julian code shall represent the day the product was packaged into the tray and the tray sealed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Polymeric tray lid. The lid shall be clearly printed or stamped, in a manner that does not cause damage. Permanent ink of any contrasting color, which is free of carcinogenic elements, shall be used. As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used.

Note: The font tested by Natick was Microsoft Helvetica. The font used shall be similarly clear/easy to read as Helvetica. The recommended font sizes are as follows: 22 for the product name, 14 for “yield” and “to heat in water.” If an additional note is required on the label, such as “fluff before serving,” it should also be in font size 14. All other information should be in font size 9.

- (1) Lid labeling shall include:
  - Product name and flavor
  - Ingredients
  - Net weight
  - Name and address of packer
  - “Nutrition Facts” label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA regulations.
- (2) Lid labeling shall also show the following statements:

**YIELD:** Serves 18 portions of 1 scone each.

PCR-S-003A  
13 September 2007  
**Change 01 11 Dec 09**  
SUPERSEDING  
PCR-S-003  
27 February 2004

**ICING:** Icing is packaged in a separate pouch. Knead pouch to soften icing. Drizzle icing over the scones.

**TO HEAT IN WATER:** Submerge unopened tray in water. Bring water to a boil. Simmer gently 5 minutes. Avoid overheating (tray shows evidence of bulging).

**WARNING:** Do not heat tray in oven.

**TO TRANSPORT AFTER HEATING:** Stack trays with lids oriented upright and fiberboard pads in between.

**CAUTION:** Use care when opening as pressure may have been generated within the tray.

**TO OPEN:** Using a clean knife, cut the lidding around the inside perimeter of the tray seals.

**SUGGESTION:** Cut lid along 3 sides and fold over uncut portion. Fold back to keep unused portions protected.

C. Icing pouch. Each pouch shall be correctly and legibly labeled in a manner that does not damage the pouch. Permanent black ink or other contrasting color which is free of carcinogenic elements shall be used. The information may be located anywhere on the pouch (in one complete print).

- (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) The pouch labeling shall also show the following statements:

Knead pouch to soften icing.  
Drizzle icing over the scones.

**CAREFULLY PEEL ICING POUCH AWAY FROM TRAY LID  
PRIOR TO SERVING**

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, 14

<b>PCR-S-003A</b> <b>13 September 2007</b> <b>Change 01 11 Dec 09</b> <b>SUPERSEDING</b> <b>PCR-S-003</b> <b>27 February 2004</b>
--------------------------------------------------------------------------------------------------------------------------------------------------

February 2007 would be coded as 7045. 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. One filled and sealed icing pouch shall be provided for each polymeric tray of specified product. The filled and sealed icing pouch shall be placed between the polymeric tray lid and fiberboard pad and secured to the tray lid using a food grade, peelable adhesive or alternate method of attachment. The icing pouch shall peel away easily from the tray lid. Four filled, sealed and processed polymeric trays shall be packed in a snug fitting fiberboard box conforming to style RSC-L, type CF, grade 275 of ASTM D 5118/D 5118M Standard Practice for Fabrication of Fiberboard Shipping Boxes. The trays shall be stacked with lids oriented upright. Fiberboard pads shall be placed between the trays and on the top and bottom of the stacked trays. The pad dimensions shall be not less than 1/8 inch of the full length and width inside dimensions of the box and shall be fabricated of class domestic, grade 275 fiberboard. The box shall be closed in accordance with ASTM D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

### **D-4 UNITIZATION**

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

### **D-5 MARKING**

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DSCP FORM 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence.

### **D-6 MISCELLANEOUS INFORMATION**

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

A. Icing pouch material. It has been found that a pouch with minimum inside dimensions of 8-3/4 inches in length by 6-5/8 inches in width and fabricated from a 3-ply laminate constructed of, from inside to outside, 0.002 inch thick linear low density polyethylene,

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

extrusion coated or laminated to 0.00035 inch thick aluminum foil, and extrusion coated or laminated to 0.0006 inch thick biaxially oriented nylon, meets the performance requirements of this document.

### **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

<b>PCR-S-003A</b> <b>13 September 2007</b> <b>Change 01 11 Dec 09</b> <b>SUPERSEDING</b> <b>PCR-S-003</b> <b>27 February 2004</b>
--------------------------------------------------------------------------------------------------------------------------------------------------

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

One lot of each item produced shall be randomly selected during each calendar month of production. Two (2) sample units shall be randomly selected from that one production lot. The two (2) 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 and the methods of inspection cited in this section.

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

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in polymeric trays. The sample unit shall be the contents of one polymeric tray and one icing pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I below. The filled and sealed polymeric trays and icing pouches shall be brought to room temperature (65°F to 75°F).

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
<u>Major</u>	<u>Minor</u>	<u>General</u>
101		Product not flavor as specified.
102		Less than 18 scones in a polymeric tray.

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

- 103 Product not fully baked (gummy center or soggy areas or raw portions).
- 104 Evidence of excessive baking (materially darkened or scorched).
- 105 Polymeric tray does not contain intact oxygen scavenger(s).
- 106 Icing pouch missing or leaking.
- 201 Evidence of compression streaks.
- 202 Scone broken into three or more pieces.
- 203 Scones do not have dense or biscuit-like appearance.
- 204 Exterior color not light tan to golden brown.
- 205 Interior crumb not light tan color.
- 206 Evidence of delamination by ovenable tray insert (if utilized).
- 207 Icing pouch not adhered to tray lid.
- 208 Icing pouch does not peel away easily from tray lid.

TABLE I. Product defects 1/ 2/ 3/ continued

Category		Defect
Major	Minor	
		<u>Appearance</u>
	209	Flavor I cinnamon scone does not have brown cinnamon chips uniformly dispersed.

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

- 210 Flavor II blueberry scone does not have blueberry bits uniformly dispersed.
- 211 Flavor III apple strudel scone does not have apple or cinnamon bits uniformly dispersed.
- 212 Icing not white in color.
- Odor and flavor
- 107 Flavor I cinnamon scones not a sweet cinnamon or baking soda or baked wheat flour odor or flavor.
- 108 Flavor II blueberry scones not a sweet blueberry or baking soda or baked wheat flour odor or flavor.
- 109 Flavor III apple strudel scones not a sweet apple or cinnamon or baking soda or baked wheat flour odor or flavor.
- 213 Icing not a sweet odor or flavor.
- Texture
- 214 Scones not soft or not slightly dry or not crumbly or not dense or not biscuit-like.
- 215 Icing not moist or not easily spreadable or not smooth.

TABLE I. Product defects 1/ 2/ 3/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	<u>Net weight</u>
		216 Net weight of polymeric tray less than 36 ounces.
		217 Net weight of icing pouch less than 6.0 ounces.

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

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/ As applicable, cut scone in half along the length from top to bottom and examine both interior surfaces for defects.

#### B. Methods of Inspection

(1) 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 at 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight.

a. Flavors I, II, and III. The net weight of the filled and sealed polymeric tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty tray, ovenable tray insert (if utilized), appropriate number of oxygen scavengers, and lid. Results shall be reported to the nearest 1 ounce.

b. Icing. The net weight of the filled and sealed icing pouch 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.

(3) Water activity (Aw) testing. Eight filled and sealed polymeric trays shall be selected at random from the lot regardless of lot size. Water activity shall be determined not less than 4 days but not more than 14 days after baking to allow moisture equilibration in the product. The product shall be individually tested for Aw in accordance with the Official Methods of Analysis (OMA) of the AOAC method 978.18, using an electric hygrometer system self-temperature controlled at 25°C or an equivalent instrument. The sample unit shall be a specimen from the center of the product. The results of each Aw determination shall be reported to the nearest 0.001. Any nonconforming result shall be cause for rejection of the lot. The samples to be tested shall not include the icing.

<b>PCR-S-003A</b> <b>13 September 2007</b> <b>Change 01 11 Dec 09</b> <b>SUPERSEDING</b> <b>PCR-S-003</b> <b>27 February 2004</b>
--------------------------------------------------------------------------------------------------------------------------------------------------

(4) Oxygen content testing. Eight filled and sealed polymeric trays shall be randomly selected from one production lot and individually tested for oxygen content. Testing shall be accomplished after the filled and sealed polymeric trays have been allowed to equilibrate at room temperature for not less than 72 hours from the time of sealing. Test results shall be reported to the nearest 0.01 percent. Verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be cause for rejection of the lot.

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

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray without the lid will be referred to as the “tray” and the polymeric tray with the lid shall be referred to as the “container”. The container and container material shall be examined for the characteristics listed in table I of MIL-PRF-32004, Packaging of Food in Polymeric Trays. The lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

<u>Prior to processing</u>			
<u>Characteristic</u>	<u>Lot size expressed in</u>	<u>Sample unit</u>	<u>Inspection level</u>
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1
<u>After processing</u>			
Characteristic	Lot size expressed in	Sample unit	Inspection level
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Headspace (vacuum) <u>1/</u>	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1
Lid opening	Containers	1 container	S-1

1/ Lack of visible gap between straight edge and lidding material along entire length of lidding and/or lack of tautness by the lidding shall not be scored as defects.

(2) Examination of container. The container shall be examined for the defects listed in table II of MIL-PRF-32004 and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. 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. Fifty sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

Category		Defect
Major A	Minor	
101		Polymeric tray lid or body labeling missing, incorrect or illegible.
	201	When a pre-printed self adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

the label is not properly adhered.

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D 3330/D 3330M Standard Test Method for Peel Adhesion of Pressure Sensitive Tape. In lieu of testing, a Certificate of Conformance (CoC) shall be provided.

B. Component. Inspection for icing pouch shall be as follows:

(1) Unfilled preformed pouch certification. A CoC may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,C,(1),a. When deemed necessary by the USDA, testing of the unfilled preformed pouches for internal pressure resistance shall be as specified in E-6,B,(3),c.

(2) Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in table IV. The lot size shall be expressed in pouches. The sample unit shall be one pouch. 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 6.5 for minor defects.

TABLE IV. Filled and sealed icing pouch defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear or hole or open seal.
102		Seal width less than 1/16 inch. 2/
103		Presence of delamination. 3/
104		Unclean pouch. 4/
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

- 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 1/16 inch.
  - 204 Presence of delamination. 3/
- 

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

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

3/ Delamination defect classification:

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

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

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

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

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

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

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

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

(3) Seal testing. The pouch seals shall be tested for seal strength as required in a, b, or c, as applicable.

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F 88, 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 cause for rejection of the lot.

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F 88. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. For the form-fill-seal 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 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 lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. 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 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer's seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table IV, footnote 2/) 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 V below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE V. Shipping container and marking defects

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

Category	Defect
<u>Major</u>	<u>Minor</u>
101	Marking missing or incorrect or illegible.
102	Inadequate workmanship. <u>1/</u>
201	Arrangement or number of polymeric trays not as specified.

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.

D. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

**SECTION J REFERENCE DOCUMENTS**

DSCP FORMS

- DSCP FORM 3507    Loads, Unit: Preparation of Semiperishable Subsistence Items
- DSCP FORM 3556    Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

- MIL-PRF-32004    Packaging of Food in Polymeric Trays

GOVERNMENT PUBLICATIONS

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

NON-GOVERNMENTAL STANDARDS

- AMERICAN SOCIETY FOR QUALITY (ASQ)

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

ANSI/ASQ Z1.4-2003 Sampling Procedures and Tables for Inspection by  
Attributes

ASTM INTERNATIONAL

D 1974-98 (2003) Standard Practice for Methods of Closing, Sealing,  
and Reinforcing Fiberboard Boxes

D 3330/D 3330M-04 Standard Test Method for Peel Adhesion of  
Pressure-Sensitive Tape

D 5118/D 5118M-05ae1 Standard Practice for Fabrication of Fiberboard  
Shipping Boxes

F 88-07 Standard Test Method for Seal Strength of Flexible  
Barrier Materials

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

**PCR-S-003A**  
**13 September 2007**  
**Change 01 11 Dec 09**  
**SUPERSEDING**  
**PCR-S-003**  
**27 February 2004**

## For DSCP Website Posting

RDNS-CFF

11 December 2009

TO: DSCP-FTRE

SUBJECT: ES10-025; Document changes to PCR-S-03A, Scones, Packaged in a Polymeric Tray, Shelf Stable; Request for time parameter in Packaging section; UGR-H&S™

1. Natick concurs with the contractor's request to add 'within 4 hours of baking' to Section D-1 Packaging, A. These changes were made to the Cakes and Brownies, Packaged in a Polymeric Tray document in the revision dated October 2009. Justification is that this will help preserve the freshness of the product and to help retard the staling process to obtain the desired shelf life.
2. Natick submits the following change to the subject document for all current, pending and future procurements until the document is formally amended or revised:
  - a. Section D-1, A., line 2, after 'polymeric trays' and before 'and', insert "within 4 hours of baking"
3. Attached is PCR-S-003A, Scones, Packaged in a Polymeric Tray, Shelf Stable with Change 01 dated 11 December 09 with changes highlighted.