PCR-H-013
12 October 2005

SECTION C

This document covers thermostabilized ham chunks with juices packaged in an institutional size pouch (ISP) for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-H-013, HAM CHUNKS WITH JUICES, PACKAGED IN AN INSTITUTIONAL SIZE POUCH (ISP), SHELF STABLE

Types.

Type II - Institutional Size Pouch - 106 ounces (3.01 kg)
Type III - Institutional Size Pouch - 80 ounces (2.27 kg)
Type IV - Institutional Size Pouch - 64 ounces (1.81 kg)
Type V - Institutional Size Pouch - 48 ounces (1.36 kg)

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. 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^{o}F.

D. Appearance.

(1) General. The finished product shall be ham chunks with juices. There shall be no ham chunk consisting entirely of fat. The packaged food shall be free from foreign materials.

(2) Ham chunks. The ham shall be high commercial quality derived from cured, fully cooked, shankless; cured, smoked, sectioned and formed; or cured, smoked, shankless hams. Hams labeled “water added” shall be acceptable. The ham chunks shall be produced by a 2.5

inch by 2.5 inch by 1 inch machine dicer setting, and shall be practically free of bone or bone fragments, cartilage, coarse connective tissue, seam fat, skin, blood clots or bruises, and glandular material. The ham chunks shall be practically free of pale or soft areas and practically free of uncured or uncooked areas. Coarse-textured dark meat or the presence of shank meat shall not be acceptable. No chunks shall be greater than 2.5 by 2.5 by 1 inch in size.

E. Odor and flavor. The packaged food shall have an odor and flavor of cooked ham. The packaged food shall be free from foreign odors and flavors.

F. Texture. The texture of the ham chunks shall be moist and tender.

G. Net weight.

(1) Type II. The average net weight shall be not less than 106 ounces (3.01 kilograms). No individual pouch shall have a net weight of less than 104 ounces (2.95 kilograms).

(2) Type III. The average net weight shall be not less than 80 ounces (2.27 kilograms). No individual pouch shall have a net weight of less than 78 ounces (2.22 kilograms).

(3) Type IV. The average net weight shall be not less than 64 ounces (1.81 kilograms). No individual pouch shall have a net weight of less than 63 ounces (1.79 kilograms).

(4) Type V. The average net weight shall be not less than 48 ounces (1.36 kilograms). No individual pouch shall have a net weight of less than 47 ounces (1.34 kilograms).

H. Drained weight.

(1) Type II. The average drained weight shall be not less than 60.5 ounces (1.72 kilograms). No individual pouch shall contain less than 58.5 ounces (1.66 kilograms) drained weight of the ham chunks.

(2) Type III, IV, and V. The drained weights for the average and individual pouches for types III, IV, and V shall be not less than 57.0 percent of the net weight.

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 not be greater than 17.0 percent.

(2) Salt content. The salt content shall not be greater than 2.5 percent.

SECTION D

D-1 PACKAGING

Product shall be filled into pouches, processed and each pouch placed into a carton in accordance with MIL-PRF-44073, Packaging of Food in Flexible Pouches, Type II.

D-2 LABELING

A. Pouches. Each pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or any other contrasting color, which is free of carcinogenic elements. Prior to thermal processing of the pouches, the product name, lot number and filling equipment number shall be applied. All other marking may be applied before or after thermal processing. As an alternate 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) Product name
(2) Ingredients
(3) Net weight
(4) Name and address of packer
(5) Pouch code includes: 1/
  Lot Number
  Filling equipment identification number
  Retort identification number
  Retort cook number
(6) Official establishment number (for example, EST 38)
(7) USDA official inspection legend for the packer's plant

1/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 12 October 2005 would be coded as 5285). The Julian code shall represent the day the product was packaged into the pouch and processed. Sub-lotting (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.

TO HEAT IN WATER: Submerge unopened pouch in water. Bring water to a boil. Simmer gently [cite appropriate time] minutes. Avoid overheating (pouch shows evidence of bulging).

WARNING: Do not heat pouch in oven.

TO TRANSPORT AFTER HEATING: Insert pouch back into carton or empty pouch into an insulated food container to protect during transport.

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

TO OPEN: Open at tear notch or cut with a clean knife.

Note: The number of portions and the heating time will be different, depending on the net weight of the pouch. These requirements will be determined during production.

B. Cartons. Each carton shall be correctly and legibly labeled with the product name. Commonly used abbreviations may be used when authorized by the inspection agency.

D-3 PACKING

A. Packing for shipment to ration assembler. Four filled, sealed, processed and cartoned ISP pouches shall be packed in a fiberboard box conforming to style RSC-L, class domestic, variety SW, grade 200 of ASTM D 5118/D 5118M Standard Practice for Fabrication of Fiberboard Shipping Boxes. The box shall be closed in accordance with ASTM D 1974, 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 performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

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

One lot shall be randomly selected during each calendar month of production.
Two (2) sample units of each item produced 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/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 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I below. The pouches shall be heated in accordance with pouch label instructions prior to conducting any portion of the product examination. The samples for drained weight inspection shall be selected using the same sampling criteria as above.

TABLE I. Product defects 1/ 2/ 3/ 4/

Category		Defect
Major	Minor	
		Appearance
101		Product not ham chunks with juices.
102		Ham chunk consisting entirely of fat.
103		Bone or bone fragment measuring more than 0.3 inch in any dimension.
104		Presence of coarse–textured dark meat or shank meat in the chunks.
	201	Presence of ham chunks with pale or soft areas or ham chunks with uncured or uncooked areas.
105		Ham chunk greater than 2.5 by 2.5 by 1 inch in size.
	202	Total weight of cartilage, coarse connective tissue, seam fat, skin, blood clots, bruises, and glandular material more than 2.0 ounces.
		Odor and flavor
106		The packaged food does not have an odor or flavor of cooked ham chunks.

TABLE I. Product defects cont'd 1/ 2/ 3/ 4/

Category		Defect
Major	Minor	
		Texture
	203	Ham chunks not moist or not tender.
		Net weight
	204	For type II, net weight of an individual pouch less than 104 ounces (2.95 kilograms). 5/
	205	For type III, net weight of an individual pouch less than 78 ounces (2.22 kilograms). 5/
	206	For type IV, net weight of an individual pouch less than 63 ounces (1.79 kilograms). 5/
	207	For type V, net weight of an individual pouch less than 47 ounces (1.34 kilograms). 5/
		Drained weight
	208	For type II, drained weight of ham chunks in an individual pouch less than 58.5 ounces (1.66 kilograms). 6/
	209	For types III or IV or V, drained weight in an individual pouch less than 56.0 percent of the net weight. 7/

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, wood, glass, metal, or mold, 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/ Machine dicer size requirement for ham shall be verified by a certificate of conformance.

4/ Commercial quality ham or "water added" ham types shall be verified by a certificate of conformance.

5/ For type II, sample average net weight less than 106 ounces (3.01 kilograms) shall be cause for rejection of the lot. For type III, sample average net weight less than 80 ounces (2.27 kilograms) shall be cause for rejection of the lot. For type IV, sample average net weight less than 64 ounces (1.81 kilograms) shall be cause for rejection of the lot. For type V, sample average net weight less than 48 ounces (1.36 kilograms) shall be cause for rejection of the lot.

6/ For type II, sample average drained weight less than 60.5 ounces (1.72 kilograms) shall be cause for rejection of the lot.

7/ For types III or IV or V, sample average drained weight less than 57.0 percent of the net weight shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Commercial sterility shall be verified in accordance with USDA/FSIS regulations.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 36 month shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(3) Net weight. The net weight of the filled and sealed 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 1 ounce (0.03 kilogram).

(4) Drained weight. The pouch contents shall be poured into a flat-bottom container. A minimum of three times the pouch's volume of not less than 140°F water shall be added to the container so as to cover the contents. The contents and water shall be gently agitated so as to liquefy rendered fat without breaking the ham chunks. The contents shall then be poured into a U.S. Standard 1/4 inch sieve in a manner that will distribute the product over the sieve without breaking the ham chunks. The sieve area shall be such that the distributed product does not completely cover all the openings of the sieve. The sieve shall be tilted at such an angle so as to assure complete drainage of all liquid from the product. The product shall be drained for 2 minutes before determining the drained weight. Determine the drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.5 ounce (0.01 kilogram).

(5) Analytical. The sample to be analyzed shall be a one-pound composite of ham chunks with juices from three thoroughly drained filled and sealed pouches that have been selected at random from one production 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	985.15
Salt	935.47

Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

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

A. Packaging and labeling.

(1) Pouch testing. The pouch and material shall be examined for the characteristics listed in table I of MIL-PRF-44073. The lot size, sample unit, and inspection level criteria for each test characteristic are listed below. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

Characteristic	Lot size expressed in	Sample unit	Inspection level
Prior to processing			
Oxygen transmission rate	Yards	1/2 yard	S-1
Water vapor transmission rate	Yards	1/2 yard	S-1
After processing			
Thermal processing	Pouches	1 pouch	S-2
Standard temperature	Pouches	1 pouch	S-2
Frozen temperature	Pouches	1 pouch	S-2
Residual gas	Pouches	1 pouch	S-2
Internal pressure	Pouches	1 pouch	S-2

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

(3) Examination of pouch and carton assembly. The completed pouch and carton assemblies shall be examined for the defects listed in table III of MIL-PRF-44073. The lot size shall be expressed in units of completed assemblies. The sample unit shall be one pouch and carton assembly. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects. Fifty sample pouch and carton assemblies shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table II 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 II. Shipping container and marking defects

Category		Defect
Major	Minor	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. 1/
	201	Contents more or less than 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.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

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

MILITARY SPECIFICATIONS

MIL-PRF-44073	Packaging of Food in Flexible Pouches

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

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

ASTM INTERNATIONAL

D1974-98 (2003)	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D5118/D 5118M-05	Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL

Official Methods of Analysis (OMA) of the AOAC International