

## **SECTION C**

This document covers thermostabilized ham chunks, with juices packaged in a No. 10 metal can (603 x 700) for use by the Department of Defense as a component of operational rations.

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

**PCR-H-011, HAM CHUNKS, WITH JUICES, PACKAGED IN A No. 10 METAL CAN (603 x 700), SHELF STABLE**

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

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements (PCR) document. The approved sample shall serve as the product standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non-comparable to the Product Standard, the contractor shall 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 24 months at 80°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 and shall be offered in the chilled state as: 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 sizes typically produced by a 2.5 by 2.5 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. The average net weight shall be not less than 105.5 ounces. No individual can shall have a net weight of less than 103.5 ounces.

H. Drained weight. The average drained weight shall be not less than 60.5 ounces. No individual can shall contain less than 58.5 ounces drained weight of the ham chunks.

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 of any individual can shall not be greater than 17.0 percent.

(2) Salt content. The salt content of any individual can shall not be greater than 2.5 percent.

## **SECTION D**

### **D-1 PACKAGING**

A. Commercial packaging. The ham chunks with juices shall be packaged in a No. 10 metal can (603 x 700) in accordance with good commercial practice. The filled can shall be hermetically sealed under a vacuum of not less than 20 inches (50.8 cm) of mercury. The filled, sealed, and processed can shall conform to the United States Standards for Condition of Food Containers.

B. Export packaging. The ham chunks with juices shall be packaged in a No. 10 metal can (603 x 700) in accordance with good commercial practice. The filled can shall be hermetically sealed under a vacuum of not less than 20 inches (50.8 cm) of mercury. The can shall be an open-top style, round metal can, with welded side seam and compound-lined, double-seamed ends. The can shall be made throughout from not less than 0.25 pound per base box electrolytic tin plate. Alternatively, the cans may be fabricated from ECCS plate, fully enameled both inside and out. In addition, the cans shall be beaded to provide paneling resistance. The entire inside area of the can shall be coated with enamel.

## **D-2 LABELING**

A. Labeling of metal cans. Labeling of metal cans shall be as specified in DSCP FORM 2997, Labeling of Metal Cans for Subsistence.

## **D-3 PACKING**

A. Commercial packing. Six cans of product shall be packed in a shipping container complying with the National Motor Freight Classification or the Uniform Freight Classification.

B. Export packing. Six cans of product shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC, grade W5c or W5s of ASTM D5118/D5118M-95 (2001), Standard Practice for Fabrication of Fiberboard Shipping Boxes. The cans shall be arranged three in length and two in width within the container. Each shipping container shall be closed and reinforced with nonmetallic strapping or pressure-sensitive adhesive filament-reinforced tape in accordance with ASTM D1974-98, 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 Shipping Cases, Sacks and Palletized/Containerized 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 Soldier & Biological Chemical Command  
Soldiers System Ctr., Natick Soldier Center  
Attn: AMSSB-RCF-F(N)  
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 cans. The sample unit shall be the contents of one can. 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 cans shall be tested for vacuum prior to product examination. Then cans shall be heated at least 15 minutes in 140° - 150°F water 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
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not ham chunks in juices.
102		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 is more than 1.0 ounces.
		<u>Odor and flavor</u>
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
<u>Major</u>	<u>Minor</u>	
		<u>Texture</u>
	203	Texture of the ham chunks not moist or not tender.
		<u>Net weight</u>
	204	Net weight of an individual can less than 103.5 ounces. <u>5/</u>
		<u>Drained weight</u>
	205	Drained weight of an individual can less than 58.5 ounces. <u>6/</u>

1/ Presence of any foreign material 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/ Sample average net weight less than 105.5 ounces shall be cause for rejection of the lot.

6/ Sample average drained weight of less than 60.5 ounces shall be cause for rejection of the lot.

B. Methods of inspection.

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

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 24 month shelf life when stored at 80 °F. Government verification may include storage for 6 months at 100 °F or 24 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 can shall be determined by weighing each sample unit on a suitable scale tared with a representative empty can and lid. Results shall be reported to the nearest 0.5 ounce.

(4) Drained weight. The can contents shall be poured into a flat-bottom container. A minimum of three times the can's volume of 180°F to 190°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 1/2 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.

(5) Analytical. The sample to be analyzed shall be a one-pound composite of ham chunks with juices from three filled and sealed cans that have been selected at random from one production lot. The composite sample shall be prepared and analyzed in accordance with the following Official Methods of Analysis of AOAC International (OMA).

<u>Test</u>	<u>Method Number</u>
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, 603 x 700 METAL CAN)**

A. Packaging.

(1) Can condition examination. Examination of filled and sealed cans shall be in accordance with the United States Standards for Condition of Food Containers. In addition, scratches, scuffs or abrasions that occur on the outside coating as a result of the filling, sealing, and processing of the cans shall not be scored as a defect.

(2) Can closure examination. Can closures shall be examined visually and by teardowns in accordance with the can manufacturer's requirement and 21 CFR, Part 113, Subpart D, or 9 CFR, Part 318, Subpart G, as applicable. Any nonconformance based on observation of can seam teardowns or on record of can seam teardowns shall be classified as a major defect and shall be cause for rejection of any involved product.

(3) Can vacuum examination. The filled and sealed cans selected for the product examination shall be examined for vacuum. The cans and contents shall be allowed to reach 70° to 80°F. No heating of sample cans shall occur prior to attaining vacuum readings. The vacuum reading shall be taken with a puncture-type vacuum gauge making the puncture as near as possible to the double seam to minimize error due to distortion of the end. A correction of 1 inch of vacuum shall be added to the gauge reading for each 1000 feet above sea level at which the determination is made. Failure of any can to meet the vacuum requirement shall be classified as a major defect and shall be cause for rejection of the lot.

B. Labeling.

(1) Can labeling examination. The can labeling shall be examined in accordance with the requirements of DSCP FORM 2997, Labeling of Metal Cans for Subsistence.

C. 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
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Arrangement or number of cans 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 2997	Labeling of Metal Cans for Subsistence
DSCP FORM 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items
DSCP FORM 3556	Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder  
(21 CFR Parts 1-199) and (9 CFR Parts 1-391)  
U.S. Standards for Condition of Food Containers

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

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

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC.

UNIFORM FREIGHT CLASSIFICATION COMMITTEE

ASTM INTERNATIONAL

D1974-98	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL

Official Methods of Analysis of the AOAC International