

## **SECTION C**

This document covers thermostabilized beef roasted with gravy packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

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

**PCR-B-046A, BEEF, ROASTED WITH GRAVY, PACKAGED IN A POLYMERIC TRAY, 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 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 finished product shall be roasted beef with gravy. The finished product shall be free from foreign materials.

(2) Beef. Prior to processing, the roasted beef chunks shall be produced from boneless whole muscle beef using a 1-3/4 inch dicer setting. The beef chunks shall be practically free of visible surface fat and shall visually exhibit natural muscle shred structure. The exterior surface of the roasted beef shall be a medium to dark brown color. The interior of the roasted beef shall be a light to medium brown color and may have some areas of pinkish brown. The packaged food shall be practically free of bone or bone fragments, cartilage, coarse connective tissue, tendons or ligaments, and glandular material.

(3) Gravy. The gravy shall be a medium to dark brown color and have a glossy sheen. The gravy shall be slightly to moderately thick and may contain a slight amount of roasted beef fines.

E. Odor and flavor. The packaged food shall have an odor and flavor of roasted beef in a beef broth based gravy seasoned with onion, garlic, salt and black pepper. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Beef. The roasted whole muscle beef chunks shall be moist and tender and shall not be mushy. The roasted beef chunks shall have pull apart muscle fiber tendencies representative of whole muscle beef.

(2) Gravy. The gravy shall be smooth and slightly to moderately thick and may contain a slight amount of roasted beef fines.

G. Net weight. The average net weight shall be not less than 88 ounces (2495 grams). The net weight of an individual polymeric tray shall be not less than 86 ounces (2438 grams).

H. Drained weight. The average drained weight of the whole muscle beef chunks shall be not less than 50.0 ounces (1418 grams). The drained weight of an individual polymeric tray shall be not less than 48.0 ounces (1361 grams).

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. The fat content shall be not greater than 10.0 percent.

(2) Salt. The salt content shall be not less than 0.5 and not greater than 1.5 percent.

## **SECTION D**

### **D-1 PACKAGING**

A. Preservation. Product shall be filled into polymeric trays which shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays. Government verification testing and inspection of trays, lids, sleeves and fiberboard pads 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.

## **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 marking of trays with the product name, lot number and filling equipment number shall be applied prior to processing. Additional tray marking may be applied before or after processing. 1/

Tray body markings shall include:

- (1) Product name. Commonly used abbreviations may be used.
- (2) Tray code includes: 2/
  - Lot number
  - Filling equipment identification number
  - Retort identification number
  - Retort cook number
  - Official establishment number

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid prior to processing, 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 after processing.

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 2018 would be coded as 8045). The Julian code shall represent the day the product was packaged into the tray and processed. 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

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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  
Ingredients  
Net weight  
Name and address of packer  
Official inspection legend  
“Nutrition Facts” label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable USDA regulations

(2) Lid labeling shall also show the following statements:

**YIELD:** Serves 10 portions of approximately 1 cup each of roasted beef with gravy.

**TO HEAT IN WATER:** Submerge unopened tray in water. Bring water to a boil. Simmer gently 35-40 minutes. Avoid overheating (tray shows evidence of bulging).

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

**TO TRANSPORT AFTER HEATING:** Insert tray back into protective sleeve to protect during transport. If sleeve is unavailable, stack trays lid-to-lid with 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.

(3) The product shall be formulated and labeled in accordance with all USDA labeling regulations and policies. The lid shall be labeled with the following product name:

**BEEF, ROASTED WITH GRAVY**

### **D-3 PACKING**

A. Packing. Four filled, sealed and processed polymeric trays shall be packed with sleeves or fiberboard pads in a fiberboard shipping container 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, burst grade 200 or ECT grade 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Type I trays shall be placed flat with the first two trays placed with the lids together and the next two trays with the lids together. Type II trays shall be stacked with lids oriented upright. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

### **D-4 UNITIZATION**

A. Unit loads. Unit loads shall be as specified in accordance with DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

### **D-5 MARKING**

A. Shipping containers and unit loads. 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.

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(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 performance 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:

DEPARTMENT OF THE ARMY  
RDNS-SEC-EMR  
NATICK SOLDIER SYSTEMS CENTER  
10 GENERAL GREENE AVENUE  
NATICK, MA 01760

One lot shall be randomly selected during each calendar month of production or as otherwise specified in the contract. 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 (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 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 trays. The sample unit shall be the contents of one tray. 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

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and defect classifications are listed in table I. The trays shall be heated in accordance with the heating instructions from the tray label 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/

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
		<u>General</u>
	101	Product not roasted beef with gravy.
		<u>Appearance</u>
	102	Bone or bone fragment measuring more than 0.3 inch in any dimension.
	201	Roasted beef chunks not boneless whole muscle beef. <u>3/</u>
	202	Beef chunks not practically free of visible surface fat or do not visually exhibit natural muscle shred structure.
	203	Exterior surface of the roasted beef not a medium to dark brown color.
	204	Interior of the roasted beef not a light to medium brown color.
	205	Total weight of cartilage, coarse connective tissue, tendons or ligaments, and glandular material more than 2.0 ounces (57 grams).
	206	Gravy not a medium to dark brown color or does not have a glossy sheen.
	207	Gravy not slightly to moderately thick.
		<u>Odor and flavor</u>
	103	Product does not have an odor or flavor of roasted beef in a beef broth based gravy seasoned with onion or garlic or salt or black pepper.

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TABLE I. Product defects 1/ 2/ - Continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Texture</u>
	208	Roasted whole muscle beef chunks not moist or not tender or are mushy.
	209	Roasted beef chunks do not have pull apart muscle fiber tendencies representative of whole muscle beef.
	210	Gravy not smooth or not slightly to moderately thick.
		<u>Net weight</u>
	211	Net weight of an individual polymeric tray less than 86 ounces (2438 grams). <u>4/</u>
		<u>Drained weight</u>
	212	Drained weight of whole muscle beef chunks in an individual polymeric tray less than 48.0 ounces (1361 grams). <u>5/</u>

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/ Requirement for boneless whole muscle beef (prior to processing) and dicer machine size requirement shall be verified by Certificate of Conformance (CoC).

4/ Sample average net weight less than 88 ounces (2495 grams) shall be cause for rejection of the lot.

5/ Sample average drained weight of whole muscle beef chunks less than 50.0 ounces (1418 grams) 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 quality scale to be considered acceptable.

(3) Net weight. 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 and lid. Results shall be reported to the nearest 1 ounce or to the nearest 1 gram.

(4) Drained weight. Weigh a U.S. Standard No. 4 sieve to obtain the sieve tare weight. The polymeric tray contents shall be poured into a flat-bottom container. A minimum of three times the volume of the polymeric tray of not less than 140°F and not greater than 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 and to remove the gravy without breaking the beef chunks. The contents shall then be poured into a U.S. Standard No. 4 sieve in a manner that will distribute the product over the sieve without breaking the beef 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 to assure complete drainage of liquid from the product. Drain product for two minutes before determining 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 or to the nearest 1 gram.

(5) Analytical. The sample to be analyzed shall be a one-pound composite of three filled and sealed polymeric trays that have been selected at random from the 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.

<u>Test</u>	<u>Method Number</u>
Fat	991.36, 2007.04, or 2008.06
Salt	935.47 or 971.27

Test results shall be reported to the nearest 0.1 percent. 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.

**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 tray, container and packaging materials 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 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  
Prior to processing

Characteristic	Lot size expressed in	Sample unit	Inspection level
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
Water vapor transmission rate of lid	yards	1/2 yard	S-1
Camouflage	containers	1 container	S-1

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Characteristic	<u>After processing</u>		
	Lot size expressed in	Sample unit	Inspection level
Processing	trays	1 tray	S-2
Rough handling survivability	shipping containers	1 container	S-2
Protective sleeve (as applicable)	sleeves	1 sleeve	S-1
Fiberboard pad (as applicable)	fiberboard pads	1 pad	S-1
Residual gas	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

(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. 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. Two hundred 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
<u>Major A</u>	<u>Minor</u>	
101		Polymeric tray lid or body labeling missing or 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 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 D3330/D3330M, Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape. In lieu of testing, a CoC shall be provided.

B. Packing.

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

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.

C. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

**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 Forms

Form 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items
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
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## GOVERNMENT PUBLICATIONS

Federal Meat Inspection Act and regulations promulgated thereunder (9 Code of Federal Regulations (CFR) Parts 1-391)

## NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) [www.asq.org](http://www.asq.org)

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

ASTM INTERNATIONAL [www.astm.org](http://www.astm.org)

D1974/D1974M          Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

D3330/D3330M          Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape

D4727/D4727M          Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes

D5118/D5118M          Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL [www.aoac.org](http://www.aoac.org)

Official Methods of Analysis (OMA) of AOAC International

North American Meat Processors Association (NAMP) [www.namp.com](http://www.namp.com)

Meat Buyers Guide