

SECTION C

This document covers thermostabilized meatballs in marinara sauce in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-M-015, MEATBALLS IN MARINARA SAUCE, PACKAGED IN A FLEXIBLE POUCH, 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 36 months at 80°F.

D. Appearance.

(1) General. The finished product shall be intact meatballs in marinara sauce. The packaged food shall be free from foreign materials.

(2) Meatballs. The meatballs shall have a cooked ground beef color. The meatballs may be rounded and irregular in shape and size. The cooked meatballs shall be practically free of bone or bone fragments, cartilage, coarse connective tissue, tendons or ligaments, and glandular material.

(3) Sauce. The sauce shall be an opaque red to reddish brown color. The sauce shall have small pieces of tomato, onion, and flecks of herbs.

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E. Odor and flavor. The packaged food shall have a cooked beef, tomato and onion odor and flavor and shall be mildly seasoned with Italian herbs and spices. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Meatballs. The cooked meatballs shall be moist, tender and shall not be mushy.

(2) Sauce. The sauce shall be moderately thick.

G. Net weight. The average net weight of the pouched product shall be not less than 8.0 ounces (227 grams). No individual pouch shall have a net weight of less than 7.5 ounces (213 grams).

H. Drained weight. The average drained weight of meatballs shall be not less than 2.7 ounces (76 grams). The drained weight of meatballs in an individual pouch shall be not less than 2.4 ounces (68 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 content. The fat content shall be not greater than 10 percent.

(2) Salt content. The salt content shall be not less than 0.5 percent and not greater than 1.4 percent.

C-3 MISCELLANEOUS INFORMATION

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

A. Ingredients. Meatballs (beef and pork, water, textured vegetable protein {soy protein concentrate, caramel, color}), bread crumbs (enriched wheat flour {niacin, iron, thiamine mononitrate, riboflavin, folic acid}), durum flour, leavening {sodium bicarbonate, sodium acid pyrophosphate}, yeast, tomato paste, soy protein concentrate, salt, dehydrated Worcestershire sauce (dextrose, dehydrated garlic, salt, cellulose gum, chili pepper, spices, mustard, malic acid, natural, flavorings, dehydrated onion), flavoring, spice, powdered lemon juice (corn syrup solids, lemon juice solids), beef stock, autolyzed yeast, sodium phosphate,

tomato puree, water, diced tomatoes in tomato puree, onions, 2 percent or less of: salt, sugar, modified food starch (from corn), parmesan cheese {pasteurized part skim milk, salt, cultures, enzymes}, spice, olive oil, garlic.

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 I.~~ Product shall be filled into pouches and sealed in accordance with MIL-PRF-44073, Packaging of Food in Flexible Pouches, Type I, Style 1.

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.

- (1) Product name (not less than 1/8 inch high). Commonly used abbreviations may be used when authorized by the inspection agency.

- (2) Pouch code includes: 1/

- Lot Number
- Filling equipment identification number
- Official establishment number (Optional)
- Retort identification number and Retort cook number (Optional)
- Time stamp (hour and minute of filling/sealing operation)

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, 30 August 2006 would be coded as 6242). 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.

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(3) USDA official inspection legend for the packer's plant 1/

1/ May be placed on the paperboard sleeve if labeled under USDA/FSIS supervision as an identification service.

B. ~~Cartons.~~ Paperboard sleeves.

(1) ~~The cartons shall be clearly printed on one of the largest panels with permanent black ink as follows:~~ The sleeves shall be clearly printed on one of the panels with permanent black ink as follows: 1/

Product name (7/32 to 9/32 inch block letters)
Ingredients
Net weight
Name and address of packer
~~Code (same as pouch code, see pouches) 1/ 2/~~
USDA official inspection legend for the packer's plant
"Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations

~~1/ Code may be ink printed on any outside carton panel. Code may be embossed on any outside carton panel except the largest panels of the carton.~~

1/ With contracting officer approval, this information may be printed on the pouch in lieu of the paperboard sleeve.

~~2/ Official establishment number not required in carton code.~~

(2) Military nutrition information entitled "Military Rations Are Good Performance Meals" shall be printed on the entrée cartons large panel opposite to the panel printed with the data in D-2, B, (1) above. The information, provided by the contracting officer, shall be clearly printed with permanent black ink in an area no smaller than 4 1/4 inches by 6 3/4 inches. shall be printed on the entrée sleeve's panel opposite to the panel printed with the data in D-2,B(1) above, as applicable. The information, provided by the contracting officer, shall be clearly printed with permanent black ink in an area no smaller than 4 inches by 5-1/4 inches.

(3) The product shall be formulated and labeled in accordance with all USDA labeling regulations and policies. The sleeves (or pouches, as applicable) shall be labeled with the following product name.

MEATBALLS IN MARINARA SAUCE

D-3 PACKING

A. Packing for shipment to ration assembler. Seventy-two pouches (of the same product) in cartons shall be packed flat or on edge in a snug-fitting fiberboard shipping container conforming to style RSC, type CF, class domestic, grade 200 of ASTM D 5118/D 5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely 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, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC 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.

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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. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) 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/tests and methods of inspection cited in this section and in Section 4 of MIL-PRF-44073.

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. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I. For drained weight inspection, a separate set of pouches shall be selected from the lot using the same sampling criteria as

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above. The pouches shall be immersed in not less than 140°F water for 10 minutes prior to conducting the product examination and the drained weight inspection.

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not intact meatballs in marinara sauce.
102		Bone or bone fragment measuring more than 0.3 inch in any dimension.
	201	Meatballs not a cooked ground beef color.
	202	Sauce not an opaque red to reddish brown color.
	203	Sauce does not have small pieces of tomato or onion or flecks of herbs.
	204	Total weight of cartilage, coarse connective tissue, tendons or ligaments, and glandular material more than 0.35 ounces.
		<u>Odor and flavor</u>
103		The packaged food does not have an odor or flavor of cooked beef, tomato or onion mildly seasoned with Italian herbs and spices.
		<u>Texture</u>
	205	Meatballs not moist or not tender.
	206	Meatballs mushy.
	207	Sauce not moderately thick.
		<u>Net weight</u>
	208	Net weight of an individual pouch less than 7.5 ounces (213 grams). <u>3/</u>
		<u>Drained weight</u>

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209 Drained weight of meatballs in an individual pouch less than 2.4 ounces (68 grams). 4/

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/ Sample average net weight less than 8.0 ounces (227 grams) shall be cause for rejection of the lot.

4/ Sample average drained weight for meatballs less than 2.7 ounces (76 grams) shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Testing for commercial sterility shall be 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 pouches shall be determined by weighing each sample on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.1 ounce or to the nearest gram.

(4) Drained weight. The pouch contents shall be poured into a flat-bottom container. A minimum of three times the volume of the pouch 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 and to remove the sauce. The contents shall then be poured into a U.S. Standard No. 8 sieve in a manner that will distribute the product over the sieve. 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

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drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.1 ounce or to the nearest gram.

(5) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches which have been selected at random from the lot. The composited 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	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 nonconforming results shall be cause for rejection of the lot.

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

A. Packaging and labeling.

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

<u>Characteristic</u>	<u>Lot size expressed in</u>	<u>Sample unit</u>	<u>Inspection level</u>
Oxygen transmission rate	yards	1/2 yard	S-1
Water vapor transmission rate	yards	1/2 yard	S-1
Camouflage	yards	1/2 yard	S-1
Thermal processing	pouches	1 pouch	S-2
Environmental conditions	pouches	1 pouch	S-2
Low temperature	pouches	1 pouch	S-2
High temperature	pouches	1 pouch	S-2
Directional tear	pouches	1 pouch	S-3

(2) Filled and sealed pouch testing. The filled and sealed thermoprocessed or hot-fill processed pouches shall be examined for the characteristics listed in table I of MIL-PRF-44073 for Type I. The lot size, sample unit, and inspection level criteria for each of the test

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characteristics 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
Residual gas volume	pouches	1 pouch	S-2
Internal pressure	pouches	1 pouch	S-2 <u>1/</u>

1/ When a three-seal tester is used, a separate set of samples is required for testing of the closure seal.

(23) Pouch examination. The pouches shall be examined for the defects listed in table II of MIL-PRF-44073 for Type I. 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.

~~(34) 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 for Type I. 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.~~ Sleeve examination. The sleeves shall be examined for the defects listed in table III of MIL-PRF-44073 for Type I. The lot size shall be expressed in units of sleeves. The sample unit shall be one sleeve. 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.

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.

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TABLE II. 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	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/ASQCZ1.4-2003 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 5118/D 5118M-05a Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL

Official Methods of Analysis (OMA) of the Association of Analytical Chemists International

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