SECTION C

C-1 NSN/ITEM DESCRIPTION

PCR-S-0002 SPAGHETTI WITH MEAT AND SAUCE, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Each component is consumed by combat personnel under worldwide environmental extremes as part of an operational ration, and is a source of nutritional intake. It is essential that this item be produced in accordance with good commercial practice to attain high standards of appearance, odor, flavor, and texture so that high levels of troop acceptance are achieved.

C-2 PERFORMANCE REQUIREMENTS

A. First article. A sample shall be subjected to first article inspection in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements.

B. Commercial sterility. The packaged food shall be processed until commercially sterile.

C. Shelf life. The packaged food shall meet the minimum shelf life requirement of 36 months at 80ºF.

D. Appearance.

(1) Beef. The beef shall be of the appearance typically produced by a 3/8 inch plate machine setting. The cooked beef shall be free of cartilage, coarse connective tissue, section of tendons or ligaments, and glandular material. The beef shall have a characteristic, cooked, ground beef color.

(2) Spaghetti. The cooked spaghetti shall be typically produced from enriched spaghetti and shall be approximately 2.0 inches in length. The cooked spaghetti shall be an off white to light tan color.

(3) Sauce. The sauce shall be an opaque, reddish brown color.

(4) General. There shall be no bone or bone fragment in the packaged food.

E. Odor and flavor.

(1) General. The packaged food shall have an odor and flavor characteristic of processed spaghetti and beef in a moderately spiced, tomato based, Italian-style sauce.

(2) Foreign. The packaged food shall be free from foreign odors and flavors such as, but not limited to, burnt, scorched, rancid, sour, or stale.

F. Texture.

(1) Beef. The ground beef shall be moist and tender.

(2) Spaghetti. The cooked spaghetti shall be slightly soft to slightly firm. The spaghetti shall not be pasty.

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

G. Weight.

(1) Net weight. The average net weight shall be not less than 8.0 ounces. No individual pouch shall contain less than 7.5 ounces.

(2) Drained weight. The average drained weight of the beef and spaghetti shall be not less than 5.1 ounces. The drained weight of the beef and spaghetti in an individual pouch shall be not less than 4.5 ounces.

H. Palatability. The finished product shall be equal to or better than the approved first article, when applicable, or other approved model in palatability and overall appearance.

I. Nutrient content.

(1) Fat content. The fat content shall be not greater than 9.0 percent.

(2) Salt content. The salt content shall be not greater than 1.3 percent.

C-3 MISCELLANEOUS INFORMATION

A. Ingredients and formulation. Ingredients and formulation percentages may be as follows:

(1) Sauce

Ingredients	Percent by weight
Beef, ground	32.50
Water	30.63
Tomatoes, crushed or diced (8 % solids)	17.23
Tomato paste (26 % solids)	12.70
Parmesan cheese, grated	2.05
Salt	1.25
Starch, food, modified, high opacity	1.25
Onion, chopped, dehydrated	1.20
Sugar, white, granulated	0.75
Garlic powder	0.17
Onion powder	0.10
Oregano, ground	0.08
Basil, ground	0.04
Pepper, red, ground	0.03
Thyme, ground	0.01
Bay leaves, ground	0.01

(2) Product.

Ingredients	Percent by weight
Meat sauce	83.0
Spaghetti	17.0

SECTION D

D-1 PACKAGING

A. Product shall be filled into pouches and pouches shall be filled into cartons, both of which shall meet the requirements of Section 3 and Figures 1 and 2 of MIL-PRF-44073. Verification testing and inspection of pouch and carton conformance to the requirements shall be by the testing and inspections of Section 4 of MIL-PRF-44073 and the Quality Assurance Provisions of Section E of this Performance-based Contract Requirements.

D-2 LABELING

A. Pouches. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch, with permanent black ink or any other contrasting color, which is free of carcinogenic elements or ingredients. To avoid erroneous marking of pouches, the product name, lot number and filling equipment number shall be applied prior to thermal processing. All other marking may be applied before or after thermal processing.

(1)) Product name (1/8 to 7/16 inch block letters).

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 (for example, EST-38) (applicable to class 1 and 3 only)
Retort identification number
Retort cook number

1/ Shall be code marked as follows: 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, July 1, 1997 would be coded as 7182). 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. For food products that do not require an establishment number, the Julian code shall be preceded by three capital letters, which represent the packer's name.

B. Cartons.

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

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 approval stamp for the packers plant (applicable to meat and poultry items only).
"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.

2/ Official establishment number not required in carton code.

(2) Military nutrition information entitled "Basic Heat Injury Prevention" shall be printed on the large carton panel opposite to the panel printed with the data in D-2, B.(1). 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.

Comment [p1]: Natick Case Number ES04-077, Change 05, 07-JUN-04. Nutrition Labels for Inclusion in the Meal, Ready-to-Eat (MRE).

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, 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 Shipping Containers.

D-4 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DPSC Form 3556, Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

E-6 QUALITY ASSURANCE PROVISIONS

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.

Quality Assurance Provisions.

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are recommended.

A. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) First article inspection. The first article shall be inspected in accordance with the provisions of this Performance-based Contract Requirements 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 first article.

(2) Conformance inspection. Conformance inspection shall include the product examination and the methods of inspection cited in this section.

B. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements 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 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 above. The pouches shall be immersed in not less than 140°F water for 10 minutes prior to the drained weight inspection.

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

Category		Defect
Major	Minor	
		Appearance
101		Bone or bone fragment measuring more than 0.3 inch in any dimension.
102		Beef color not characteristic of cooked ground beef.
	201	Total weight of cartilage, coarse connective tissue, section of tendons or ligaments, and glandular material is more than 0.35 ounces.
	202	Color of cooked spaghetti not off white to light tan.
	203	Color of sauce not opaque, reddish brown.
		Odor and flavor
103		Odor or flavor not characteristic of processed ground beef and spaghetti in a moderately spiced, tomato based, Italian-style sauce.
		Texture
	204	Ground beef not moist or not tender.
	205	Spaghetti not slightly soft to slightly firm.
	206	Spaghetti is pasty.
	207	Sauce not moderately thick.
		Weight
	208	Net weight of an individual pouch less than 7.5 ounces. 5/
	209	Drained weight of beef and spaghetti in an individual pouch less than 4.5 ounces. 6/

1/ Presence of any foreign odors and 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 first article, when applicable, or other approved model in palatability and overall appearance shall be cause for rejection of the lot.

3/ Machine size requirement for ground beef shall be verified by certificate of conformance.

4/ Type and size requirements for cooked spaghetti shall be verified by certificate of conformance.

5/ If the sample average net weight is less than 8.0 ounces, the lot shall be rejected.

6/ If the sample average drained weight of the beef and spaghetti is less than 5.1 ounces, the lot shall be rejected.

C. Methods of inspection.

(1) Commercial sterility. Testing for commercial sterility shall be in accordance with MIL-PRF-44073.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year 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.

(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 and to remove the sauce without breaking the beef or the spaghetti. The contents shall then be poured into a U.S. Standard No. 20 sieve in a manner that will distribute the product over the sieve without breaking the beef or the spaghetti. 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 approximately a 45° angle and allowed to drain for 2 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 0.1 ounce.

(5) Nutrient content. 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 (see NOTE) and analyzed for fat content, and salt content in accordance with the following methods of the Official Methods of Analysis of AOAC International:

Test	Method Number
Fat	960.39, 985.15
Salt	935.47

Test results shall be reported to the nearest 0.1 percent. Any result not conforming to the requirements specified in Section C of this Performance-based Contract Requirements shall be cause for rejection of the lot.

NOTE: The USDA will use AOAC method 983.18 for preparation of the sample.

SECTION J REFERENCE DOCUMENTS

DPSC FORMS

DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence, May 96

FEDERAL SPECIFICATION

FED-STD-595 Colors Used in Government Procurement

MILITARY SPECIFICATIONS

MIL-PRF-44073 Packaging of Food in Flexible Pouches

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC)

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers
D 3985 Oxygen Gas Transmission Rate Through Plastic Film and Sheeting Using a Coulometric Sensor
D 5118 Standard Practice for Fabrication of Fiberboard Shipping Boxes
F 372 Standard Test Method for Water Vapor Transmission of Flexible Barrier Materials Using an Infrared Detection Technique

AOAC INTERNATIONAL Official Methods of Analysis of the AOAC International

PCR-S-0002
05 November 1997
W/CHANGE 05 7 June 2004

MEMORANDUM FOR Defense Supply Center Philadelphia
Directorate of Subsistence, Bldg. 6
ATTN: DSCP-FTSL (Mr. Mike Malason)
700 Robbins Avenue
Philadelphia, PA 19111-5092

SUBJECT: ES04-077, Nutrition Labels for Inclusion in the Meal, Ready-to-Eat (MRE)

1. Four nutrition labels for inclusion in the MRE have been approved by the Joint Services Operational Rations Forum (JSORF), which was held February 2003, at Fort Lee, VA.

2. The Natick Soldier Center (NSC) has prepared graphic drawings and electronic files (".jpeg" and ".ppt") of the nutrition labels that shall replace the label information entitled, "Military Rations Are Good Performance Meals", on the chipboard cartons of the following MRE Entrees:

For Chili and Macaroni, PCR-C-027, Delete "Military Rations Are Good Performance Meals" and Insert "Food, Water, and Exercise are Tactical Weapons".
For Beef Stew, PCR-B-020, Delete "Military Rations Are Good Performance Meals" and Insert "WHAT'S IN AN MRE".
For Spaghetti w/ Meat Sauce, PCR-S-0002, Delete "Military Rations Are Good Performance Meals" and Insert "Basic Heat Injury Prevention".
For Beef Enchiladas, PCR-B-010 Delete "Military Rations Are Good Performance Meals" and Insert "Do's and Don'ts for Cold Weather Nutrition".

3. NSC requests the Defense Supply Center Philadelphia (DSCP) provide the four nutrition labels to the MRE Assemblers for inclusion in the MRE XXV procurement (2005 Date of Pack). (Enclosed)

4. The point of contact for this action is Ms. Barbara Daley, Individual Combat Ration Team, Combat Feeding Directorate, at DSN 256-4937/COM (508) 233-4937.

12 Encls

DONALD A. HAMLIN
Team Leader
Food Engineering Services Team

Arichards

CF:
Aylward, J
Daley, B
Hamlin, D
Hill, B
Richards, A
Valvano, R

BASIC HEAT INJURY PREVENTION

Consider water a tactical weapon. Drink frequently. Be aware that dark yellow colored, infrequent urination is a sign of dehydration. Perform heavy work in the cooler hours of the day, such an early morning or late evening, if possible. Minimize heat stress by decreasing work pace and/or increasing rest periods. Be aware that heat acclimatization takes 1-2 weeks.

HEAT CRAMPS

SYMPTOMS: Muscle cramps of arms, legs and or stomach. Heavy sweating (wet skin) and extreme thirst may occur.
FIRST AID: Move the soldier to a shady area and loosen clothing. Have the soldier drink at least 1 canteen of water mixed with a packet of salt or sport drink.

HEAT EXHAUSTION

SYMPTOMS: Heaving sweating with pale, moist, cool or hot skin, weakness, dizziness, and/or fatigue.
FIRST AID: Move the soldier to a shady area and loosen clothing. Pour water on the soldier and fan to permit cooling effect. Have the soldier slowly drink at least one canteen of water. Elevate the soldier's legs.

HEATSTROKE

SYMPTOMS: Hot, disoriented, delirious, or unconscious. May have any of the heat exhaustion symptoms (including increased sweating) but the signs and symptoms are more severe.
FIRST AID: HEAT STROKE IS A MEDICAL EMERGENCY. EVACUATE to a medical facility.

HYPONATREMIA ("Water Intoxification)

SYMPTOMS: Confusion, disorientation, headache, nausea, vomiting, and muscle weakness. This condition is rare, however it can result from sodium losses in sweat, excessive water intake, or both.
FIRST AID: Consume salty snacks to offset the loss of salt in sweat—more serious symptoms may indicate a medical emergency.