

SECTION C

This document covers thermostabilized mashed potatoes packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

**PCR-P-011A, POTATOES, MASHED, PACKAGED IN A FLEXIBLE POUCH,
SHELF STABLE**

C-2 PERFORMANCE REQUIREMENTS

Flavors.

- I – Plain
- II – Garlic

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 product shall show no evidence of excessive heating (materially darkened or scorched). The finished product shall be free from foreign materials.

(2) Flavor I. The plain mashed potatoes shall be off white to pale tan in color, moderately thick, and may have some small lumps. The plain mashed potatoes may have pieces of potato skin.

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(3) Flavor II. The garlic mashed potatoes shall be white to off white, moderately thick, and may have some small lumps. The product may contain pieces of parsley.

E. Odor and flavor. The packaged food shall be free from foreign odors and flavors.

(1) Flavor I. The product shall have a cooked potato and mild butter odor and flavor.

(2) Flavor II. The product shall have a cooked potato and garlic odor and flavor.

F. Texture.

(1) Flavors I and II. The mashed potatoes shall be moderately thick and may have some small soft lumps. The potatoes shall not be pasty.

G. Net weight. The average net weight shall be not less than 5.0 ounces (142 grams). The net weight of an individual pouch shall be not less than 4.5 ounces (128 grams).

H. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

I. Analytical requirements.

(1) Fat content. The fat content shall be not greater than 5.0 percent. Flavor II garlic mashed potatoes shall be prepared without ingredients which contribute trans fats from hydrogenated oils.

(2) Salt content.

a. Flavor I. The salt content shall be not greater than 1.3 percent.

b. Flavor II. The salt content shall be not greater than 1.0 percent.

(3) Moisture content. The moisture content shall be not greater than 83.0 percent.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

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

<u>Ingredients</u>	<u>Percent by weight</u>
Dehydrofrozen potatoes	47.00
Water	46.97
Margarine	5.00
Salt	1.00
White pepper, ground	0.03

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

B. Flavor II.

(1) Ingredients. Water, potatoes, margarine (partially hydrogenated and fully refined soybean oil, water, salt, mono and diglycerides, whey, and soy lecithin, sodium benzoate added to help preserve freshness, artificial flavor, artificially colored with beta carotene, vitamin A palmitate added) cream cheese (pasteurized milk and cream, cheese culture, salt, carob bean gum), garlic (garlic, water, citric acid), salt sodium bisulfite (preservative), pepper and parsley. Allergen information: Contains Milk and Soy

(2) Color standard. The color is approximately # 1 on the National Cheese Institute Cheese Color Standard, from Cargill Foods, Phone 1-800-342-5724, www.cargill.com.

Note: Flavor II product used was produced by Ameriquel Foods.

SECTION D

D-1 PACKAGING

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

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.
- (2) Pouch code includes: 1/

Lot Number
Filling equipment identification number
Company code
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, 14 February 2010 would be coded as 0045). The Julian code shall represent the day the product was packaged into the pouch and processed. Following the four digit Julian code the other required code information shall be printed in the sequence as listed above.

B. Cartons.

(1) The cartons shall be clearly printed on one of the largest panels 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/ 3/
“Nutrition Facts” label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA 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/ Company code not required in carton code.

3/ Cartons shall be time stamped with the hour and minute that the pouch is sealed into the carton. (Cartons are not expected to bear same time stamp as pouch). Alternatively, the optional Retort identification number and Retort cook number shall be used.

(2) Military nutrition information entitled “Nutrition: A FORCE MULTIPLIER” shall be printed on the non 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 3-3/4 inches by 5-3/4 inches.

(3) The product shall be formulated and labeled in accordance with all FDA labeling regulations and policies. The cartons shall be labeled with the following product names, as applicable.

<u>Flavors</u>	<u>Product Name</u>
I	MASHED POTATOES
II	GARLIC MASHED POTATOES

D-3 PACKING

A. Packing. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC of ASTM D 5118/D 5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, grade 200 of ASTM D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be securely closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-5 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/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.

(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

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Natick Soldier Research, Development and Engineering Center
RDNS-CFF
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/ASQ 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. The pouches shall be immersed in not less than 140°F water for 10 minutes prior to conducting the product examination.

TABLE I. Product defects 1/ 2/ 3/

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not flavor as specified.
	201	Flavor I plain mashed potatoes not an off white to pale tan color.
	202	Flavor II garlic mashed potatoes not a white to off white color.
102		Product shows evidence of excessive heating (materially darkened or scorched).
		<u>Odor and flavor</u>
103		Flavor I not a cooked potato or mild butter odor or flavor.
104		Flavor II not a cooked potato or garlic odor or flavor.
		<u>Texture</u>
	203	Mashed potatoes not moderately thick.
	204	Mashed potatoes pasty.
		<u>Net weight</u>
	205	Net weight of an individual pouch less than 4.5 ounces (128 grams). <u>4/</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/ Flavor II garlic mashed potatoes, product ingredients not verified by a CoC as meeting the trans fat from hydrogenated oils requirement shall be cause for rejection of the lot.

4/ Sample average net weight less than 5.0 ounces (142 grams) shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Commercial sterility shall be verified in accordance with FDA 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 1 gram.

(4) 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 composite sample shall be prepared and analyzed in accordance with the following Official Methods of Analysis (OMA) of AOAC International.

<u>Test</u>	<u>Method Number</u>
Fat	922.06
Salt	935.47
Moisture	925.45D

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 requirements shall be cause for rejection of the lot.

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

A. Packaging.

(1) Pouch material testing. The pouch 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 of the test 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
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
Low temperature	pouches	1 pouch	S-2
High temperature	pouches	1 pouch	S-2

(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. 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 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>
Directional tear	pouches	1 pouch	S-2

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

(3) 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.

(4) 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.

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
<u>Major</u>	<u>Minor</u>	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. <u>1/</u>
	201	More than 40 pounds of product.

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

Unless otherwise specified, the issues of these documents are those active on the date of the solicitation or contract.

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) www.asq.org

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

ASTM INTERNATIONAL www.astm.org

D 1974 Standard Practice for Methods of Closing, Sealing, and
Reinforcing Fiberboard Boxes

D 4727/D 4727M Standard Specification for Corrugated and Solid
Fiberboard Sheet Stock (Container Grade) and Cut Shapes

D 5118/D 5118M Standard Practice for Fabrication of Fiberboard Shipping
Boxes

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International