

SECTION C

This document covers shelf stable mashed potatoes with brown gravy, packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-M-007A, MASHED POTATOES WITH BROWN 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 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 cooked mashed potatoes with a top layer of brown gravy. The product shall show no evidence of excessive heating (materially darkened or scorched). The finished product shall be free from foreign materials.

(2) Potatoes. The mashed potatoes shall be an off-white color.

(3) Gravy. The gravy shall be semi-translucent, glossy and a medium brown color.

E. Odor and flavor. The packaged food shall have a cooked mashed potato and roasted beef gravy odor and flavor. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Potatoes. The mashed potatoes shall be thick and may have small soft lumps. The mashed potatoes shall not be pasty.

(2) Gravy. The gravy shall be smooth and moderately thick.

G. Net weight. The average net weight shall be not less than 93 ounces (2637 grams). The net weight of an individual polymeric tray shall be not less than 91 ounces (2580 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. The fat content shall be not greater than 4.5 percent.

(2) Salt. The salt content shall be not less than 0.8 and not greater than 1.3 percent.

(3) Moisture. The moisture content shall be not less than 79.0 and not greater than 84.0 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, Type 1, Retortable products. Government verification testing and inspection of trays, lids, sleeves and fiberboard pads, as applicable, 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-

PCR-M-007A
4 September 2020
SUPERSEDING
PCR-M-007
12 April 2000

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 2030 would be coded as 0045). 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

PCR-M-007A
4 September 2020
SUPERSEDING
PCR-M-007
12 April 2000

product name, 14 for “yield” and “to heat in water.” If an additional note is required on the label 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 FDA regulations

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

YIELD: Serves 18 portions of approximately 2/3 cup each.

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:

MASHED POTATOES WITH BROWN 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, minimum burst grade 275 or ECT 44 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. 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 and unit loads 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.

PCR-M-007A
4 September 2020
SUPERSEDING
PCR-M-007
12 April 2000

(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 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
FCDD-SCC-EMR
COMBAT CAPABILITIES DEVELOPMENT COMMAND-SOLDIER CENTER
10 GENERAL GREENE AVENUE
NATICK, MA 01760-5056

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 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.

TABLE I. Product defects 1/ 2/

| Category | | Defect |
|--------------|--------------|--|
| <u>Major</u> | <u>Minor</u> | |
| | | <u>Appearance</u> |
| 101 | | Finished product not cooked mashed potatoes or not with a top layer of brown gravy. |
| 102 | | Product shows evidence of excessive heating (materially darkened or scorched). |
| | 201 | Mashed potatoes not an off-white color. |
| | 202 | Gravy not semi-translucent or not glossy or not a medium brown color. |
| | | <u>Odor and flavor</u> |
| 103 | | The packaged food does not have a cooked mashed potato or not a roasted beef gravy odor or flavor. |
| | | <u>Texture</u> |
| | 203 | Mashed potatoes not thick. |
| | 204 | Mashed potatoes are pasty. |
| | 205 | Gravy not smooth or not moderately thick. |

TABLE I. Product defects 1/ 2/ - Continued

| Category | | Defect |
|--------------|--------------|--|
| <u>Major</u> | <u>Minor</u> | <u>Net weight</u> |
| | 206 | Net weight of an individual polymeric tray less than 91 ounces (2580 grams). <u>3/</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/ Sample average net weight less than 93 ounces (2637 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 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) 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 one 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:

PCR-M-007A
4 September 2020
SUPERSEDING
PCR-M-007
12 April 2000

| <u>Test</u> | <u>Method Number</u> |
|-------------|----------------------------|
| Fat | 922.06 or 2008.06 |
| Salt | 935.47 or 971.27 |
| Moisture | 926.08, 925.09, or 2008.06 |

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, as applicable, in accordance with the lot size, sample unit, and inspection level criteria shall be examined for the performance characteristics listed in table I of MIL-PRF-32004, Packaging of Food in Polymeric Trays. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

(2) Examination of container. The container shall be examined for the defects listed in table II of MIL-PRF-32004. 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. The labeling defects are listed in table II as follows:

TABLE II. 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 III. 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 III. 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 |

DEPARTMENT OF DEFENSE SPECIFICATION

| | |
|---------------|--------------------------------------|
| MIL-PRF-32004 | Packaging of Food in Polymeric Trays |
|---------------|--------------------------------------|

(Copies of these documents are available from <http://quicksearch.dla.mil/qsSearch.aspx> or from the Standardization Document Order Desk, 700 Robbins Ave, Building 4D, Philadelphia, PA 19111-5094.)

GOVERNMENT PUBLICATION

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) www.asq.org

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

PCR-M-007A
4 September 2020
SUPERSEDING
PCR-M-007
12 April 2000

ASTM INTERNATIONAL 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

Official Methods of Analysis (OMA) of AOAC International