

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

SECTION C

This document covers shelf stable rice packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-R-004B, RICE, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE

Types.

- I - White rice
- III - Brown rice
- IV - Brown and wild rice pilaf

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 rice with glossy and distinct rice grains. The finished product shall be free from foreign materials.

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

(2) Type I. The finished product shall be white rice with butter. The cooked white rice shall be produced from enriched, parboiled, long grain, milled rice. The cooked white rice shall have an off-white color.

(3) Type III. The finished product shall be brown rice with butter and chicken broth. The cooked brown rice shall be produced from whole grain brown rice. The cooked brown rice shall have a light to medium tan color.

(4) Type IV. The finished product shall be brown and wild rice pilaf. The cooked rice shall be produced from whole grain brown rice and whole grain wild rice with butter and chicken broth and seasoned with herbs and spices. The cooked brown rice shall have a light to medium tan color and the cooked wild rice shall have a dark brown color. The cooked brown and wild rice pilaf shall have pieces of celery and visible flecks of herbs and spices.

E. Odor and flavor.

(1) General. The packaged food shall be free from foreign odors and flavors.

(2) Type I. The white rice shall have an odor and flavor of cooked, buttery white rice.

(3) Type III. The brown rice shall have an odor and flavor of cooked brown rice in butter and chicken broth. The brown rice shall have a nutty flavor.

(4) Type IV. The brown and wild rice pilaf shall have an odor and flavor of cooked brown and wild rice in butter and chicken broth with celery and seasonings. The brown and wild rice pilaf shall have a nutty flavor.

F. Texture. The rice shall be moist and slightly soft to slightly firm.

G. Net weight. The average net weight shall be not less than 90 ounces (2552 grams). The net weight of an individual polymeric tray shall be not less than 88 ounces (2495 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 5.5 percent. The *trans* fat content shall be not greater than 0 grams per serving.

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

(3) Moisture. For type I, the moisture content shall be not less than 60.0 and not greater than 66.0 percent. For types III and IV, the moisture content shall be not less than 58.0 and not greater than 68.0 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-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. To avoid erroneous marking of trays, 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/

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

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
Company code

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 2019 would be coded as 9045). 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 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

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

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 45-55 minutes. Avoid overheating (tray shows evidence of bulging).

Note: Fluff rice with serving utensil before serving.

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 names, as applicable:

<u>Type</u>	<u>Product name</u>
I	WHITE RICE
III	BROWN RICE
IV	BROWN AND WILD RICE PILAF

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

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-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

(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
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 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/ 3/ 4/

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
		<u>General</u>
101		Finished product not type as specified.
		<u>Appearance</u>
	201	Finished product not cooked rice with glossy or distinct rice grains.
	202	Type I cooked white rice not an off-white color.
	203	Type III cooked brown rice not a light to medium tan color.
	204	Type IV cooked brown rice not a light to medium tan color or cooked wild rice not a dark brown color.

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

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	205	Type IV cooked brown and wild rice pilaf does not have pieces of celery or visible flecks of herbs and spices.
		<u>Odor and flavor</u>
102		Type I white rice does not have an odor or flavor of cooked, buttery white rice.
103		Type III brown rice does not have an odor or flavor of cooked brown rice in butter or chicken broth.
104		Type IV brown and wild rice pilaf does not have an odor or flavor of cooked brown and wild rice in butter or chicken broth with celery or seasonings.
105		Type III brown rice or type IV brown and wild rice pilaf do not have a nutty flavor.
		<u>Texture</u>
	206	Rice not moist, or not slightly soft to slightly firm.
		<u>Net weight</u>
	207	Net weight of an individual polymeric tray less than 88 ounces (2495 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.

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

3/ The requirements for enriched, parboiled, long grain, milled rice; whole grain brown rice; and whole grain wild rice shall be verified with the statement of ingredients on the label. Failure to meet the rice requirements as specified in Section C of this document shall be cause for rejection of the lot.

4/ The *trans* fat content shall be verified by the NLEA “Nutrition Facts” label. Product not conforming to the *trans* fat content as specified in Section C of this document shall be cause for rejection of the lot.

5/ Sample average net weight less than 90 ounces (2552 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) 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 or the American Association of Cereal Chemists (AACC) International.

<u>Test</u>	<u>Method Number</u>
Fat	991.36 or 2008.06
Salt	935.47
Moisture	925.45D, 985.14, 2008.06, or AACC 44-15.02

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

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

<u>After processing</u>			
Characteristic	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.

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

(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 Certificate of Conformance (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 SPECIFICATION

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

GOVERNMENT PUBLICATION

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

NON-GOVERNMENTAL STANDARDS

AACC INTERNATIONAL www.aaccnet.org

Approved Methods of the American Association of Cereal Chemists

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

- | | |
|--------------|---|
| 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 |

PCR-R-004B
16 May 2018
SUPERSEDING
PCR-R-004A
18 April 2005

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