

INCH-POUND

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MILITARY SPECIFICATION

CARROTS, GLAZED, THERMOSTABILIZED, TRAY PACK

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers glazed carrots thermostabilized in tray pack cans for use by the Department of Defense as a component of operational rations.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.1).

SPECIFICATIONS

FEDERAL

PPP-B-636 - Boxes, Shipping, Fiberboard

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8940

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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- MIL-L-1497 - Labeling of Metal Cans for Subsistence Items
- MIL-L-35078 - Loads, Unit: Preparation of Semiperishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification For
- MIL-C-44340 - Can, Tray Pack

STANDARDS

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-900 - Bacterial Standards for Starches, Flours, Cereals, Alimentary Pastes, Dry Milks and Sugars Used in the Preparation of Thermostabilized Canned Foods for the Armed Forces

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

National Primary Drinking Water Regulations

(Copies are available from the Office of Drinking Water, Environmental Protection Agency, WH550D, 401 M Street, S.W., Washington, DC 20460.)

U.S. DEPARTMENT OF AGRICULTURE (USDA)

United States Standards for Condition of Food Containers

(Copies are available from the Chairman, Condition of Food Container Committee, Agricultural Marketing Service, U.S. Department of Agriculture, Room 0608, South Building, P.O. Box 6456, Washington, DC 20090-6456.)

U.S. Standards for Grades of Butter

(Copies are available from the Dairy Standardization Section, Dairy Division, Agricultural Marketing Service, U.S. Department of Agriculture, Room 2750, South Building, P.O. Box 96456, Washington, DC 20090-6456.)

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United States Standards for Grades of Canned Carrots

United States Standards for Grades of Frozen Carrots

(Copies are available from the Director, Fruit and Vegetable Division, Agricultural Marketing Service, U.S. Department of Agriculture, Room 2077, South Building, P.O. Box 96456, Washington, DC 20090-6456.)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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

(Copies are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

2.2 Non-government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.1).

AMERICAN ASSOCIATION OF CEREAL CHEMISTS (AACC)

Approved Methods of the American Association of Cereal Chemists

(Application for copies should be addressed to the American Association of Cereal Chemists, 3340 Pilot Knob Road, St. Paul, MN 55121.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3330 - Peel Adhesion of Pressure-sensitive Tape

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS (AOAC)

Official Methods of Analysis of the Association of Official Analytical Chemists

(Application for copies should be addressed to the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.)

NATIONAL ACADEMY OF SCIENCE

Food Chemicals Codex

(Application for copies should be addressed to the National Academy Press, 2101 Constitution Avenue, Washington, DC 20418.)

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(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.1), a sample shall be subjected to first article inspection (see 6.2) in accordance with 4.4.

3.2 Ingredients. All ingredients shall be clean, sound, wholesome, and free from foreign material, evidence of rodent or insect infestation, extraneous material, off-odors, off-flavors, and off-colors.

3.2.1 Carrots. Carrots may be either fresh or frozen.

3.2.1.1 Carrots, fresh. Carrots shall be fresh, firm, of good color, and of a variety suitable for canning. The diameter of each carrot shall be not less than 3/4 inch or more than 1-1/4 inches.

3.2.1.2 Carrots, cut, frozen. Frozen carrots shall be U.S. Grade A in accordance with U.S. Standards for Grades of Frozen Carrots and shall be of the latest season's crop. The carrots shall be cut as specified in 3.3.1.1.

3.2.2 Sugar, brown, light. The sugar shall be partially refined cane or beet sugar, shall be light brown in color, and shall have a sweet, molasses-like flavor.

3.2.3 Sugar, white, granulated. The sugar shall be white, refined, granulated, cane or beet sugar, or a combination thereof and shall comply with MIL-STD-900.

3.2.4 Butter. Butter shall be lightly salted and shall be U.S. Grade A or better conforming to the U.S. Standards for Grades of Butter.

3.2.5 Starch, waxy maize, modified. The starch shall be white, odorless, finely pulverized, modified waxy maize starch for use in canned foods. The modified starch shall demonstrate initial viscosity development in the temperature range of 140° to 170°F and a typical viscosity (be fully hydrated) at common retort temperatures. The starch shall resist breakdown at low pH, under sheer stress, and under conditions of cold storage. The starch shall be bland with essentially no cereal or starch taste and shall comply with MIL-STD-900.

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3.2.6 Juice, lemon. Lemon juice shall be prepared from the unfermented juice obtained from fresh, sound, mature, and thoroughly cleaned fruit of one or more of the high acid varieties of the species Citrus limon (limonia). Such lemon juice may be canned or frozen, single strength or concentrated.

3.2.7 Salt. Salt shall be non-iodized, white, refined sodium chloride with or without anticaking agents and shall comply with purity standards for sodium chloride of the Food Chemicals Codex.

3.2.8 Water. Water used for formulation, rehydration, blanching, ice making, and washing shall conform to the National Primary Drinking Water Regulations.

3.3 Preparation and processing.

3.3.1 Carrot preparation.

3.3.1.1 Fresh carrot preparation. The carrots shall be washed thoroughly to remove soil and foreign material, and sorted to remove any that are diseased or otherwise damaged. The sound stock shall be peeled and trimmed to remove discolored, damaged, or undesirable portions. The peeled carrots shall be cut transversely to the longitudinal axis into maximum 1-1/4 inch chunks. The carrot chunks shall be blanched sufficiently to prevent discoloration and to remove excess air. The blanched carrots shall be immediately cooled to the initial temperature of the cooling water and thoroughly drained. The cooled drained carrots shall be handled in a manner to prevent discoloration and shall be filled into tray pack cans within 4 hours after blanching.

3.3.1.2 Frozen carrot preparation. Frozen carrot chunks shall be thawed only to the extent necessary to accommodate the filling operation. The thawed carrot chunks shall be handled in a manner to prevent discoloration.

3.3.2 Syrup preparation. The syrup shall be formulated and prepared as follows:

<u>Ingredient</u>	<u>Percent by weight</u>
Water	50.64
Sugar, light brown	25.86
Butter	10.00
Sugar, granulated	6.80
Starch, waxy maize, modified	5.00
Lemon juice (single strength)	0.85
Salt ^{1/}	0.85

^{1/} Total amount of salt in the syrup formula shall be adjusted as necessary to produce a product that complies with the finished product salt requirements (see 3.6).

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NOTE: The following syrup preparation procedure was used in development of this product. Alternative procedures may be used provided finished product requirements are met. (When alternative procedures are used, the time and temperature requirements specified for the prepared syrup are still applicable.)

Approximately 80 percent of the water shall be combined with the sugars, butter, lemon juice, and salt in the processing kettle and heated to approximately 180° to 190°F. A starch slurry shall be prepared using the remaining cold water and the starch. The starch slurry shall be added slowly to the sugar mixture with constant agitation and the final mixture heated to 180° to 190°F and held at that temperature for approximately 5 minutes. Prior to filling, the volume of the final mixture shall be adjusted with water to compensate for evaporation loss. Each batch of prepared syrup shall be completely filled into the tray pack cans within 1 hour following syrup preparation.

3.4 Tray pack filling and sealing. Each tray pack can (see 5.1.1) shall be filled with product so as to conform to the finished product requirements and to the following requirements:

- a. The temperature of the syrup at the time of filling shall be in the temperature range of 150° to 180°F.
- b. Each can shall be hermetically sealed under a vacuum established by a processing authority and specified in the scheduled process so as to assure compliance with the finished product requirement (see 3.6 o).
- c. Each filled and sealed tray pack can shall be in the retort process within 2 hours after sealing.

3.5 Tray pack thermoprocessing. The filled and sealed tray pack cans shall be thermostabilized by retorting until a sterilization value (F_0) of not less than 6.0 has been achieved. The filled and sealed thermoprocessed tray pack cans shall show no evidence of can swelling when tested for commercial sterility as specified in 4.5.3.4.

3.6 Finished product requirements. The finished product shall comply with the following requirements:

- a. There shall be no foreign material such as, but not limited to, dirt, insects, insect parts, hair, wood, paper, paint, glass, or metal.
- b. There shall be no foreign odor or flavor such as, but not limited to, burnt, scorched, stale, sour, rancid, musty, or moldy.

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- c. There shall be no color foreign to the product.
- d. The salt content of an individual tray pack shall be not less than 0.5 percent nor greater than 1.0 percent.
- e. Carrots shall be no greater than 1-1/4 inches in any dimension.
- f. Each individual can shall contain not less than 56 ounces drained weight.
- g. The average drained weight shall be not less than 58 ounces.
- h. No individual can shall contain less than 108 ounces of product.
- i. The average net weight shall be not less than 110 ounces.
- j. Product shall show no evidence of excessive heating (materially darkened or scorched).
- k. The product shall meet the requirements for U.S. Grade A of the U.S. Standards for Grades of Canned Carrots except for texture, which shall be U.S. Grade C or better of the U.S. Standards for Grades of Canned Carrots.
- l. The viscosity of the syrup shall be not less than 5.0 cm per 10 seconds nor greater than 14.0 cm per 10 seconds when determined by a Bostwick Consistometer.
- m. The syrup shall not be lumpy.
- n. The syrup shall be translucent and tan-yellow in color.
- o. Filled, sealed and retorted cans shall show evidence of proper vacuum as determined by concavity of the can lid (see 4.5.6).

3.6.1 Palatability. The finished product shall be equal to or better than the approved preproduction sample (see 6.1) in palatability and overall appearance.

3.7 Plant qualification. The product shall be prepared, processed, and packaged in establishments meeting the requirements of Title 21, Code of Federal Regulations, Part 110: "Current Good Manufacturing Practice in Manufacturing, Processing, Packaging or Holding of Human Foods," and the plant sanitation requirements of the appropriate Government inspection agency.

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3.8 Federal Food, Drug, and Cosmetic Act. All deliveries shall conform in every respect to the provisions of the Federal Food, Drug, and Cosmetic Act, and regulations promulgated thereunder.

4. QUALITY ASSURANCE PROVISIONS

4.1 Contractor's responsibility. Inspection and acceptance by the USDA shall not relieve the contractor of obligation and responsibility to deliver a product complying with all requirements of this specification. The contractor shall assure product compliance prior to submitting the product to the USDA for any inspection.

4.2 Inspection and certification. Product acceptability shall be determined by the USDA. The USDA will determine the degree of inspection necessary to assure compliance with the requirements of this specification.

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

- a. First article inspection (see 4.4).
- b. Quality conformance inspection (see 4.5).

4.4 First article inspection. When a first article is required (see 6.1), it shall be inspected in accordance with the quality assurance provisions of this specification and evaluated for overall appearance and palatability. Any failure to conform to the quality assurance provisions of this specification or any appearance or palatability failure shall be cause for rejection of the first article.

4.5 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

4.5.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.5.1.1 Ingredient and component examination. Conformance of ingredients and components to identity, condition, and other requirements specified in 3.2 shall be certified by the ingredient supplier or ingredient manufacturer, and compliance be verified by examination of pertinent labels, markings, U.S. Grade Certificates, certificates of analyses, or other such valid documents acceptable to the inspection agency. If necessary, each ingredient shall be examined organoleptically or inspected according to generally recognized test methods, such as the standard methods described in the Official Methods of Analysis of the Association of Official Analytical Chemists and in the Approved Methods of the American Association of Cereal Chemists, to determine

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conformance to the requirements. Any nonconformance to an identity, condition, or other requirement shall be cause for rejection of the ingredient or component lot or of any involved product.

4.5.2 In-process examination. In-process examination shall be performed to determine conformance to the preparation, processing, can interior coating, filling, sealing, and packing requirements. Any nonconformance revealed by actual examination or by review of records of time, temperature, and formulation or of other valid documents shall be cause for rejection of the involved product.

4.5.3 Tray pack inspection. The inspection lot shall include only tray packs produced in one workshift. The USDA reserves the right to separate the inspection lot into smaller inspection lots.

4.5.3.1 Net weight inspection. Randomly select 30 filled and sealed tray pack cans from the inspection lot and weigh separately. Subtract the average tare weight (determined by randomly selecting and weighing 30 of the empty tray pack cans and lids used in preparing the product and dividing the total weight by 30) from the weight of each tray pack in the sample. The results shall be reported to the nearest 1 ounce. If the average net weight is less than 110 ounces or if the net weight of any individual can is less than 108 ounces, the lot shall be rejected.

4.5.3.2 Product inspection. The sample size shall be as indicated by the double sampling plan specified in table I. The tray pack cans shall be selected at random from the lot. The tray pack cans shall be heated for 35 minutes in boiling water, opened, and inspected for the defects listed in table II.

TABLE I. Double sampling plan for product inspection 1/

Lot size (cans)	Sample size (cans)	Cumulative sample	Acceptance number	Rejection number
0 to 3,200	8	-	0	2
	8	16	1	2
3,201 to 35,000	13	-	0	3
	13	26	3	4

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- 1/ a. If no defects are found in the first sample, the lot shall be accepted.
- b. If the number of defects found in the first sample equals or exceeds the rejection number, the lot shall be rejected.
- c. If the number of defects found in the first sample exceeds the acceptance number but is less than the rejection number, the second sample shall be inspected. Defects found in the first and second samples shall be combined and, if the number of defects in the cumulative sample equals or exceeds the rejection number, the lot shall be rejected.

TABLE II. Product defects 1/ 2/ 3/

Category	Defect
<u>Major</u>	
101	Drained weight of carrots in a can is less than 56 ounces <u>4/</u> <u>5/</u>
102	Carrots greater than 1-1/4 inches in any dimension
103	Syrup not tan-yellow in color
104	Syrup not translucent
105	Syrup lumpy
106	Product shows evidence of excessive heating (materially darkened or scorched)

- 1/ The presence of foreign material (for example, glass, dirt, insects, insect parts, hair, paper, paint, wood, metal), foreign odor or flavor (for example, burnt, scorched, moldy, rancid, musty, sour, stale), or foreign color shall be cause for rejection of the lot.
- 2/ Product not equal to or better than the approved preproduction sample in palatability and overall appearance shall be cause for rejection of the lot. (This comparison shall be performed only when deemed necessary by an Agriculture Marketing Service (AMS) agent.)
- 3/ Any product not meeting the grade requirements specified in 3.6 k shall be cause for rejection of the lot.

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- 4/ To determine drained weight, the free liquid in the can shall be poured off, strained through a U.S. Standard No. 8 sieve, and reserved for viscosity determinations. The remaining contents of the can shall be poured into a flat bottom container. A minimum of three times the tray pack can's volume of 190° to 212°F water shall be added to the container so as to cover the contents. The contents and water shall be agitated so as to remove sauce without breaking up the carrot pieces. The contents shall then be poured into a U.S. Standard 1/4-inch sieve in a manner that will distribute the product over the sieve without breaking the carrot pieces. 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 an approximate 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 1 ounce.
- 5/ The lot shall be rejected if the sample average drained weight is less than 58 ounces.

4.5.3.3 Salt content testing. Nine tray packs shall be selected at random from the lot and distributed as follows:

- Three for laboratory analyses.
- Three for submission to the contractor.
- Three for retention by an AMS agent as reserve samples.

The three tray packs for laboratory analysis shall be individually tested for salt content in accordance with the Official Methods of Analysis of the Association of Official Analytical Chemists. Preparation of the sample shall be as follows. The cans shall be opened and the entire contents of each can shall be separately blended in a Waring blender or equivalent. If the salt content of any individual tray pack is less than 0.5 percent or more than 1.0 percent, it shall be classified as a major defect and the lot shall be rejected. Results shall be reported to the nearest 0.1 percent. Analysis of reserve samples at the request of the contractor shall not be permitted unless the original laboratory analysis indicated that the involved lot will be rejected because of noncompliance with the salt content requirement. When the reserve samples are analyzed, the analyses for salt shall be made and will be considered final. Unused reserve samples shall be returned to the contractor for inclusion in subsequent lots.

4.5.3.4 Commercial sterility testing. The sample size shall be one filled, sealed, and thermoprocessed tray pack can selected from each retort batch in the lot. The sample cans shall be tested for sterility by incubating the cans at 95° ± 5°F for 10 days. Any evidence of can swelling shall be classified as a critical defect and shall be cause for rejection of the lot.

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4.5.3.5 Viscosity testing. The strained free liquid collected from each of the cans in the first sample of cans selected for drained weight inspection (see 4.5.3.2 and 4/ to table II) shall be individually tested for viscosity as specified in 4.5.3.5.1 (see 6.4).

4.5.3.5.1 Bostwick Consistometer method.

Instrument: Bostwick Consistometer
Catalog Number: 23270-004

VWR Scientific Company
P.O. Box 7900
San Francisco, CA 94120

or

Catalog Number: 15-347-50
Fisher Scientific
585 Alpha Drive
Pittsburgh, PA 15238

Method:

- a. Level the instrument.
- b. Bring the syrup to $100^{\circ} \pm 1^{\circ}\text{F}$ in a water bath in a covered container.
- c. Stir syrup thoroughly before filling the Bostwick cavity.
- d. Scrape syrup evenly across upper edge of cavity.
- e. Release syrup and time syrup flow to the nearest 1 second and distance traveled to the nearest 0.1 cm.

The lot shall be rejected if the Bostwick viscosity value of the syrup from any can in the sample is less than 5.0 cm per 10 seconds or greater than 14.0 cm per 10 seconds.

4.5.4 Can condition examination. Examination of filled and sealed tray pack cans shall be in accordance with the United States Standards for Condition of Food Containers except that inspection for labeling shall be in accordance with 4.5.4.1. In addition, the following defect shall be classified as a critical defect and shall be cause for rejection of the lot:

Evidence of buffing causing scratches or scuffing of exterior can coating.

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4.5.4.1 Can label examination. Labels shall be examined for defects in accordance with MIL-L-1497 (see 5.4), except that for self-adhering labels the following additional defects shall apply:

Major: Label torn or scratched so as to obliterate any of the markings.

Minor: Air bubbles under label.

Label not properly adhered to can, for example, label raised or peeled back from edges or corners.

4.5.4.2 Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D 3330.

4.5.5 Can closure examination. Can closure shall be examined visually and by teardowns in accordance with the can manufacturer's requirements and CFR 21, Part 113, Subpart D. Any nonconformance based on observation of can seam teardowns or of records of can seam teardowns shall be classified as a major defect and shall be cause for rejection of any involved product.

4.5.6 Vacuum examination. Cans shall be allowed to cool to $75^{\circ} \pm 5^{\circ}\text{F}$, held for at least 24 hours after sealing, and then examined for vacuum retention. To examine, lay a straight edge in the center of the lid along the length of the tray pack. Both ends of the straight edge shall touch the lid at the inside edge of the double seam. There shall be a visible gap between the straight edge and the lid for the entire distance of the label panel. Using a shorter straight edge, the same procedure shall be used across the width, in the center of the tray pack can. One measurement shall be made when examining a ribbed lid; lay the straight edge between the two center ribs along the length of the can. The inspection lot shall include only tray packs produced in a single shift on a single sealing machine. The sample size shall be 50 cans. Any nonconformance shall be classified as a major defect and shall be cause for rejection of the lot.

4.5.7 Shipping container examination. Shipping containers shall be examined for defects in assembly, closure, and reinforcement (when applicable) in accordance with PPP-B-636. In addition, the following defects shall be classified as follows:

Major: National stock number, item description, contract number, or date of pack markings missing, incorrect, or illegible.
Reinforced with other than nonmetallic strapping or tape.
Dimensions of pads not as specified.
Interior packing with fiberboard liner or pads not as specified.

Minor: Other required markings missing, incorrect, or illegible.
Arrangement or number of cans not as specified.

4.5.8 Unit load inspection. Inspection of unit loads shall be in accordance with the quality assurance provisions of MIL-L-35078.

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5. PACKAGING

5.1 Preservation. The product shall be preserved in accordance with level A.

5.1.1 Level A. One hundred and ten ounces of food product shall be filled into a tray pack can conforming to MIL-C-44340 and sealed and thermoprocessed as specified in 3.4 and 3.5. Buffing of the can causing damage to the exterior can coating is not permitted (see 4.5.4).

5.2 Packing. The product shall be packed in accordance with level A, B, or C, as specified (see 6.1).

5.2.1 Level A packing. Four cans of product, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard box, constructed and closed in accordance with style RSC-L or HSC-L with an HSC full depth cover, grade V2s of PPP-B-636. The cans shall be packed flat, four in depth within the box with the first two cans placed with the lids together and the next two cans with the lids together. The inside of each box shall be provided with a box liner and five fiberboard pads fabricated of grade V3c fiberboard. The height of the box liner shall be equal to the full inside depth of the box (+0 inch, -1/8 inch). Flute direction of the box liner shall be vertical. The pads shall be placed between the cans and on the top and bottom of the stacked cans. The pad dimensions shall be not less than 1/8 inch of the full length and width dimensions of the box. Each box shall be reinforced with nonmetallic strapping or pressure-sensitive adhesive filament-reinforced tape in accordance with the appendix of PPP-B-636. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.1) except that the unit load shall consist of 48 boxes with 12 boxes per course and four courses per load with all courses having the same pattern so as to create columnar stacking. When unit loads are strapped, strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.2.2 Level B packing. Four cans of product, preserved as specified in 5.1, shall be packed as specified in 5.2.1, except the box shall be constructed of grade V3c, V3s, or V4s fiberboard.

5.2.3 Level C packing. Four cans of product, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard box, constructed and closed in accordance with style RSC-L, class domestic, grade 275 of PPP-B-636. The cans shall be packed flat, four in depth within the box, with the first two cans placed with the lids together and the next two cans with the lids together. The inside of each box shall be provided with a box liner and five fiberboard pads. The height of the box liner shall be equal to the full inside depth of the box (+0 inch, -1/8 inch). Flute direction of the box liner shall be vertical. The pads shall be placed between the cans and on the top and bottom of the stacked cans. The pad dimensions shall be not less than 1/8 inch of the full length and width dimensions of the box and shall be fabricated of the same material as the box.

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5.3 Unit loading. When specified (see 6.1), the product, packed as specified in 5.2.2 or 5.2.3, shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified except that the unit load shall consist of 48 boxes with 12 boxes per course and four courses per load with all courses having the same pattern so as to create columnar stacking. When unit loads are strapped, strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.4 Labeling. Each tray pack can shall be labeled in accordance with MIL-L-1497 and with the following:

- Official establishment number (for example, EST 38) or a three letter code identifying the establishment.
- Lot number 1/
- Production shift number 1/
- Retort identification number 1/
- Retort cook number 1/

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, March 19, 1987, would be coded as 7078). The Julian code shall represent the day the product was packaged 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.

In addition, the name of the product shall be marked, stamping is permitted, on one 1001 by 200 side of the can. The labeling shall be legible when examined as specified in 4.5.4 after preparation of the product in accordance with heating instructions. Paper labels are not permitted. Cans shall show the following statements:

TO HEAT IN WATER: Submerge unopened can in boiling water. Simmer gently for 35 minutes. Avoid overheating (can shows evidence of bulging).

CAUTION: Use care when opening as pressure may have been generated within the can.

TO HEAT IN OVEN: Either punch several holes in lid of can or open can in usual manner leaving the loose lid in place. Place in a 350°F oven 30 - 35 minutes.

WARNING: Do not place unopened can in oven. This may cause the can to burst.

YIELD: For Army Field Feeding, serves 18 portions of 3/4 cup each.
For other uses, serves 25 portions of 1/2 cup each.

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As an alternate labeling method, a preprinted, self-adhering, 0.002-inch thick, clear polyester label printed with indelible black ink may be used. Self-adhering labels shall be applied after retorting. Pressure-sensitive adhesive shall require no preparation prior to application. Labels shall tack quickly and adhere without curling or breaking. The adhesive shall have a minimum adhesion of 60 ounces per inch width when examined as specified in 4.5.4.2. When self-adhering labels are used, the tray pack can shall be labeled with the Julian code and a product code prior to retorting.

5.5 Marking.

5.5.1 Shipping containers. In addition to any special marking required by the contract or purchase order, shipping containers shall be marked in accordance with MIL-STD-129.

5.5.2 Unit loads. Unit loads shall be marked in accordance with MIL-L-35078. In addition, the following precautionary markings in capital letters larger than other markings shall be included:

CAUTION: DO NOT STACK PALLETS IN TRANSIT OR MORE
THAN TWO HIGH IN STORAGE, UNLESS PALLET RACKS
ARE USED.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- c. When a first article is required (see 3.1, 4.4, and 6.2).
- d. Provisions for approved preproduction samples (see 3.6.1 and 6.2).
- e. Level of packing required (see 5.2).
- f. Type and class of unit load when unit loading is required (see 5.2.1 and 5.3).

6.2 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

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6.3 Appropriate level of pack. Based on the conditions known or expected to be encountered during shipment, handling, and storage of the specific item being procured, the procuring activity should select the appropriate level of pack in accordance with the criteria established in AR 700-15/NAVSUPINST 4030.28/AFR 71-6/MCO 4030.33A/DLAR 4145.7.

6.4 The contracting officer may authorize an alternative contractor recommended method of viscosity testing if the alternative method is approved by U.S. Army Natick Research, Development, and Engineering Center.

6.5 Subject term (key word) listing.

Canned food
Combat field feeding
Food processing
Operational rations
Shelf stable

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - GL
Navy - SA
Air Force - 50

Preparing activity:

Army - GL
Project No. 8940-0664

Review activities:

Army - MD, TS
Navy - MC
DP - SS

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and filed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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U.S. ARMY NATICK RESEARCH, DEVELOPMENT
and ENGINEERING CENTER
ATTN: STRNC-ES
Natick, MA 01760-5014

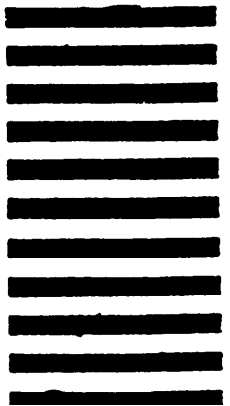
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and Engineering Center
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Natick, MA 01760-5014



STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-C-44268A	2. DOCUMENT TITLE CARROTS, GLAZED, THERMOSTABILIZED, TRAY PACK
3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION <i>(Mark one)</i> <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER <i>(Specify):</i> _____
b. ADDRESS <i>(Street, City, State, ZIP Code)</i>	
5. PROBLEM AREAS	
a. Paragraph Number and Wording:	
b. Recommended Wording:	
c. Reason/Rationale for Recommendation:	
6. REMARKS	
7a. NAME OF SUBMITTER <i>(Last, First, MI) - Optional</i>	b. WORK TELEPHONE NUMBER <i>(Include / Code) - Optional</i>
c. MAILING ADDRESS <i>(Street, City, State, ZIP Code) - Optional</i>	8. DATE OF SUBMISSION <i>(YYMMDD)</i>