

INCH-POUND

MIL-C-44244B

31 March 1992

SUPERSEDING

MIL-C-44244A

14 July 1988

## MILITARY SPECIFICATION

## CHILI CON CARNE, 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 chili con carne 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 shall be 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 used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the 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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MILITARY

- 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 Foods for the Armed Forces

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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)

Institutional Meat Purchase Specifications for Fresh Beef, Series 100

(Copies are available from the Chief, Livestock and Meat Standardization Branch, Livestock and Seed Division, Agricultural Marketing Service, U.S. Department of Agriculture, Room 2603, South Building, P.O. Box 96456, Washington, DC 20090-6456.)

Meat and Poultry Inspection Regulations

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

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U.S. Standards for Condition of Food Containers

(Copies are available from the Chairperson, Condition of Container Committee, Agricultural Marketing Service, U.S. Department of Agriculture, Room 2506, South Building, P.O. Box 96456, Washington, DC 20090-6456.)

U.S. Standards for Grades of Tomato Paste

(Copies are available from the Chief, Processed Products Branch, Fruit and Vegetable Division, Agricultural Marketing Service, U.S. Department of Agriculture, Room 0709, South Building, P.O. Box 96456, Washington, DC 20090-6456.)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)

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 DEHYDRATED ONION AND GARLIC ASSOCIATION (ADOGA)

Official Standards and Methods of the American Dehydrated Onion and Garlic Association for Dehydrated Onion and Garlic Products

(Application for copies should be addressed to the American Dehydrated Onion and Garlic Association, 650 California Street, Suite 800, San Francisco, CA 94108.)

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.)

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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, 2200 Wilson Boulevard, Suite 400-CD, Arlington, VA 22201-3301.)

NATIONAL ACADEMY OF SCIENCES

Food Chemicals Codex

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

(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 Beef. The beef shall be derived from any one or any combination of the following USDA Certified Institutional Meat Purchase Specifications (IMPS) cuts: Item Number 114 (chuck, shoulder clod), 115 (chuck, square-cut, boneless) (see NOTE), 128 (chuck, cross-cut, boneless), 133 (triangle, boneless), 161 (round, shank-off, boneless), 163 (round, shank-off, 3-way, boneless), 165 (round, rump and shank-off, boneless), 167A (round, knuckle, peeled), 169 (top round), 170A (bottom round, heel-out), and 171B (outside round). All beef shipped between plants shall be accompanied by a USDA, Agricultural Marketing Service (AMS) Certificate to certify condition of the product and compliance with the IMPS Quality Assurance Provisions.

NOTE: The shoulder clod (IMPS Item Number 114) may be removed from IMPS Item Number 115 and excluded after certification of IMPS Item Number 115 and prior to shipment to the tray pack product producer.

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3.2.1.1 Handling and storage. Handling and storage of the beef, prior to processing into the finished product, shall be in accordance with the following requirements:

a. Beef processed on the day of initial certification shall be maintained in the temperature range of 28° to 50°F (inclusive).

b. Holding in the fresh chilled state for not more than 4 days after initial certification is permitted provided that the beef is maintained in the temperature range of 28° to 40°F (inclusive).

c. Holding in the frozen state for not more than 180 days after initial certification is permitted provided that the beef is:

- frozen to 0°F or lower within 72 hours after initial certification
- stored at 0°F or lower
- protected from freezer deterioration and damage
- stored in containers that are adequate to maintain product excellence
- held after storage at an internal temperature not to exceed 40°F when further processing is resumed
- not refrozen after it has been tempered/thawed.

NOTE: Microwave tempering/thawing of the frozen beef is permitted provided that the beef is maintained in excellent condition, as determined by the USDA.

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

3.2.3 Tomato paste. The tomato paste shall be U.S. Grade A in accordance with the U.S. Standards for Grades of Tomato Paste and shall be of the latest season's pack.

3.2.4 Starch, waxy maize, modified. The starch shall be a white, odorless, finely pulverized, modified waxy maize starch for use in thermostabilized foods and shall comply with MIL-STD-900. 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 shear stress and under conditions of cold storage. The cooked modified starch slurry shall be bland with essentially no cereal or starch taste.

3.2.5 Paprika, ground. Ground paprika shall be Spanish paprika (Capsicum annuum L.) and shall possess a bright orange to red color with an extractable color value of not less than 110 American Spice and Trade Association (ASTA) color units. The ground paprika shall be of such size that not less than 95 percent shall pass through a U.S. Standard No. 30 sieve.

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3.2.6 Pepper, chili, ground. Ground chili pepper shall be derived from red, ripe fruit of Capsicum frutescens L. and shall possess the characteristic red to dark brown color. The Scoville Pungency Value shall be 900 to 1200 units. The chili pepper shall be uniformly ground to allow a minimum of 95 percent, by weight, to pass through a U.S. Standard No. 40 sieve and not more than 20 percent, by weight, to be retained on a U.S. Standard No. 60 sieve.

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

3.2.8 Onions, diced, dehydrated. Diced dehydrated onions shall be fancy grade of the Official Standards and Methods of the American Dehydrated Onion and Garlic Association for Dehydrated Onion and Garlic Products.

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

3.2.10 Cumin, ground. Ground cumin shall be the true aromatic substance derived from Cuminum cyminum L. from which no volatile or other flavoring constituents have been removed and shall be free from artificial coloring and impurities. Volatile oil content shall be not less than 2.2 mL/100g and the cumin shall be of such size that not less than 95 percent shall pass through a U.S. Standard No. 30 sieve.

3.2.11 Garlic powder. Garlic powder shall be fancy grade of the Official Standards and Methods of the American Dehydrated Onion and Garlic Association for Dehydrated Onion and Garlic Products.

3.2.12 Oregano, ground. Ground oregano shall be derived from the dried leaves of Origanum vulgare L. and shall possess a strong camphoraceous aroma and a pungent, slightly bitter flavor. The ground oregano shall contain not less than 2.0 mL of volatile oil per 100 grams of ground oregano and shall be of such size that 95 percent shall pass through a U.S. Standard No. 30 sieve.

3.2.13 Pepper, red, ground. Ground red pepper shall be derived from red, ripe fruit of Capsicum frutescens L. and shall possess the characteristic yellowish-red to red color. The Scoville Pungency Value shall be not less than 30,000 units. The red pepper shall be uniformly ground to allow a minimum of 95 percent, by weight, to pass through a U.S. Standard No. 40 sieve and not less than 95 percent, by weight, to be retained on a U.S. Standard No. 60 sieve.

3.2.14 Preblended spice and seasoning mixture. Preblended spices and seasonings may be used. The spices and seasonings in the mixture shall comply with the requirements of this document. The containers used for the

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spice and seasoning blend shall be labeled with each ingredient and the percentage of each ingredient in the blend. The ingredients shall be in the same proportions as specified in the ingredient formula.

3.3 Preparation and processing. Processing shall be on a continuous basis.

3.3.1 Beef preparation. The beef shall be prepared as follows:

a. Boned and trimmed beef meeting the requirements of 3.2.1 shall be further trimmed, if necessary, to ensure compliance with finished product requirements (see 3.6).

b. The boneless beef shall be ground once through a 1/2-inch plate, using a four-bladed knife. The ground beef shall be heated in a steam jacketed kettle with sufficient water to facilitate heat transfer to the beef (prevent scorching). The beef shall be blanched (see 6.4) and broth and rendered fat reserved for inclusion in the chili con carne. If the ground beef, broth, and rendered fat are not immediately incorporated into the chili con carne, they shall be cooled to an internal temperature of 28° to 40°F and held at this temperature for not more than 48 hours prior to chili con carne preparation.

3.3.2 Chili con carne preparation. The chili con carne shall be formulated and prepared as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Beef, ground, blanched <u>1/</u>	45.00
Water, broth, and rendered fat <u>1/</u>	41.03
Tomato paste (24 percent solids) <u>2/</u>	4.75
Starch, waxy maize, modified	3.00
Paprika, ground	1.40
Chili pepper, ground	1.20
Sugar, granulated	1.00
Onions, diced, dehydrated	1.00
Salt <u>3/</u>	1.00
Cumin, ground	0.35
Garlic powder	0.20
Oregano, ground	0.05
Pepper, red, ground	0.02

1/ The percent by weight of blanched ground beef and the percent by weight of water may be adjusted if necessary to ensure compliance with finished product requirements.

2/ If the specified tomato solids are not available, the tomato solids that are used must be adjusted to bring the solid level to that specified.

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3/ The total amount of salt in the formula shall be adjusted as necessary to produce a product that complies with the finished product salt requirements (see 3.6m).

a. A thin slurry shall be prepared with the starch and portion of the water-broth-fat mixture.

b. The balance of the ingredients, except the beef, shall be combined and heated to 190°F.

c. The starch slurry shall be added to the above mixture and the entire mixture shall be heated to 185° to 190°F and held in this temperature range for 5 minutes.

d. The blanched ground beef shall be added to the mixture and mixed only to the extent necessary to ensure a uniform distribution of the beef throughout the product.

e. The volume of the final mixture shall be adjusted with water prior to filling to compensate for evaporation loss during heating and holding.

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

a. Immediately after filling, each can shall be hermetically sealed under a vacuum established by a processing authority and specified in the scheduled process so as to ensure compliance with the finished product requirement (see 3.6o).

b. The filled and sealed tray pack cans shall be in the retort process within 2 hours after product preparation.

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 has been achieved.

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, insect parts, hair, wood, glass, or metal.

b. There shall be no foreign odor or flavor such as, but not limited to, burnt, scorched, stale, sour, rancid, or moldy.

c. There shall be no color foreign to the product.

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d. The average drained weight of beef pieces shall be not less than 39.0 ounces.

e. No individual can shall contain less than 37.0 ounces drained weight of beef pieces.

f. Total weight of cartilage, coarse connective tissue, section of tendons or ligaments, and glandular material, collectively, in a can shall be not greater than 1.0 ounce.

g. No individual can shall contain a bone piece measuring 0.3 inch or more in any dimension.

h. The texture of the beef shall not be dry, tough, rubbery, or mushy.

i. The average net weight shall be not less than 108 ounces.

j. No individual can shall contain less than 106 ounces of product.

k. The average fat content of the finished product shall be not greater than 10.0 percent.

l. No individual tray pack shall have a fat content greater than 12.0 percent.

m. No individual tray pack shall have a salt content greater than 1.2 percent or less than 0.5 percent.

n. The product shall show no evidence of excessive heating (materially darkened, scorched).

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 preproduction sample (see 6.1) in palatability and overall appearance.

3.7 Plant qualification. The beef component and the finished product shall originate and be produced, processed, and stored in plants regularly operating under Meat and Poultry Inspection Regulations of the U.S. Department of Agriculture.

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.

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## 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 the requirements of this specification. The contractor shall ensure 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 and supervision necessary to ensure 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 shall 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 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.

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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 packaging 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 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 108 ounces or if the net weight of any individual can is less than 106 ounces, the lot shall be rejected.

4.5.3.2 Double sampling plan for product inspection. The finished product shall be examined for the defects listed in table I utilizing the double sampling plans indicated in MIL-STD-105. The lot size shall be expressed in tray pack cans. The sample unit shall be one filled and sealed tray pack can. 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. The sample cans shall be heated in accordance with the heating instructions on the can label.

TABLE I. Product defects 1/ 2/

<u>Category</u>	<u>Defect</u>
<u>Major</u>	
101	Drained weight of beef pieces in a can is less than 37.0 ounces <u>3/ 4/</u>
102	Total weight of cartilage, coarse connective tissue, section of tendons or ligaments, and glandular material, collectively, in a can is greater than 1.0 ounce
103	Presence of bone piece measuring 0.3 inch or more in any dimension
104	Texture of beef dry, tough, rubbery, or mushy
105	Product shows evidence of excessive heating (materially darkened or scorched)

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- 1/ The presence of foreign material (for example, dirt, insect parts, hair, wood, glass, metal), foreign odor or flavor (for example, burnt, scorched, moldy, rancid, 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 (see 6.1) in palatability and overall appearance shall be cause for rejection of the lot (see 3.6.1).
- 3/ To determine drained weight, the free liquid in the can shall be poured off and the remaining contents shall be poured into a flat bottom container. A minimum of three times the tray pack can's volume of 180° to 190°F water shall be added to the container so as to cover the contents. The contents and water shall be agitated so as to liquefy rendered fat without breaking the beef 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 beef 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 degree angle and allowed to drain for 2 minutes before determining the drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.1 ounce.
- 4/ The lot shall be rejected if the sample average drained weight is less than 39.0 ounces.

4.5.3.3 Fat and salt content testing. Three filled and sealed tray pack cans shall be selected at random from the lot. The tray pack cans shall be individually tested for fat and salt content in accordance with the Official Methods of Analysis of the Association of Official Analytical Chemists, chapter: Meat and Meat Products, except that preparation of the samples shall be as follows: The unopened tray pack cans shall be gently warmed in a water bath to melt fat adhering to the inside of the cans. The cans shall be opened and the entire contents of each can shall be separately blended in a Waring Blendor or equivalent. The test results shall be reported to the nearest 0.1 percent. Any result failing to conform to the fat and salt requirements in 3.6 shall be classified as a major defect and shall be cause for rejection of the lot.

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 the inspection for labeling shall be in accordance with 4.5.4.1. In addition, scratches, scuffs, or abrasions that occur on the outside coating as a result of the filling, sealing, and thermoprocessing of the tray cans shall not be scored as a defect.

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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, 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 closures shall be examined visually and by teardowns in accordance with the can manufacturer's requirement and 21 CFR, Part 113, Subpart D, or 9 CFR, Part 318, Subpart G, as applicable. Any nonconformance based on observation of can seam teardowns or on record 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.

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

## 5. PACKAGING

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

5.1.1 Level A preservation. One hundred and eight 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.

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. Boxes may be stacked by interlocking and reversing each tier, or by columnar stacking with paperboard or fiberboard sheets placed between each tier. 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

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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.

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. Boxes may be stacked by interlocking and reversing each tier, or by columnar stacking with paperboard or fiberboard sheets placed between each tier. 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 digit-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, 1990 would be coded as 0078). 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 4.5.4.1 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 40 - 45 minutes. Avoid overheating (can shows evidence of bulging).

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**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 35 - 40 minutes.

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

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

As an alternate labeling method, a pre-printed, 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 cans 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 marking 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).

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- 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 52.209-4. 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 also include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.3 Appropriate level of pack. Based on 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 Blanching process. Blanching of the ground beef (see 3.3.1) to 75 ± 5 percent yield has been found adequate in complying with finished product requirements.

6.5 Subject term (key word) listing.

Canned foods  
 Combat field feeding  
 Ration  
 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 8940-0722)

Review activities:

Army - MD, QM  
 Navy - MC  
 DP - SS



# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, or clarification of 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.

<b>I RECOMMEND A CHANGE:</b>	1. DOCUMENT NUMBER MIL-C-44244B	2. DOCUMENT DATE (YYMMDD) 1992 March 31
3. DOCUMENT TITLE CHILI CON CARNE, THERMOSTABILIZED, TRAY PACK		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code)	7. DATE SUBMITTED (YYMMDD)
	(1) Commercial (2) AUTOVON (if applicable)	
8. PREPARING ACTIVITY		
a. NAME U.S. Army Natick RD&E Center	b. TELEPHONE (Include Area Code)	(2) AUTOVON/DSN
	508-651-4501	256-4501
c. ADDRESS (Include Zip Code) Commander, U.S. Army Natick RD&E Center ATTN: STRNC-WTP Natick, MA 01760-5018	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	

