

MIL-C-44204A  
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SUPERSEDING  
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MILITARY SPECIFICATION

CORNED BEEF HASH, THERMOSTABILIZED, FOR MEAL READY-TO-EAT

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

1. SCOPE

1.1 Scope. This document covers thermostabilized corned beef hash in flexible pouches for use as a component of the Meal, Ready-to-Eat, Individual.

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 specification 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.

SPECIFICATIONS

MILITARY

MIL-P-44073 - Packaging and Thermoprocessing of Foods in Flexible Pouches

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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STANDARDS

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- 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

(Copies of specifications, standards, and handbooks required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

National Primary Drinking Water Regulations

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

U.S. DEPARTMENT OF AGRICULTURE (USDA)

Meat and Poultry Inspection Regulations

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

Institutional Meat Purchase Specifications for Fresh Beef, Series 100

(Copies may be obtained from the Director, Livestock and Seed Division, Agricultural Marketing Service, U.S. Department of Agriculture, Room 2092, 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 may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

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(Copies of drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issues of the nongovernment documents which are current on the date of the solicitation.

AMERICAN ASSOCIATION OF CEREAL CHEMISTS (AACC)

Approved Methods of the American Association of Cereal Chemists

(Copies should be obtained from 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

(Copies should be obtained from the American Dehydrated Onion and Garlic Association, 650 California Street, Suite 800, San Francisco, CA 94108.)

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS (AOAC)

Official Methods of Analysis of the Association of Official Analytical Chemists

(Copies should be obtained from the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.)

NATIONAL ACADEMY OF SCIENCES

Food Chemicals Codex

(Copies should be obtained from the National Academy Press, 2101 Constitution Avenue, N.W., Washington, DC 20418.)

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

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

### 3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.4, 6.1, and 6.2).

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 from steers, heifers, or cows and shall be derived from any combination of primal or subprimal cuts of the round, shank-off (round, top round, bottom round, outside round, and knuckles). Recognizable cuts are those which, when compared to Institutional Meat Purchase Specifications (IMPS) cuts, have no more than a minor amount of lean, fat, or bone removed or included from an adjacent cut. The beef shall be in the fresh-chilled state and shall be in excellent condition, i.e., exposed lean and fat surfaces shall be of a color and bloom normally associated with the class and cut of meat, and typical of meat which has been properly stored and handled. Cut surfaces and naturally exposed lean surfaces shall show no more than slight darkening or discoloration due to dehydration, aging, or microbial activity. The fat shall show no more than a slight discoloration due to oxidation or microbial activity. No odors foreign to fresh meat shall be present. Changes in color and odor characteristically associated with vacuum-packaged meat in excellent condition shall be acceptable. The beef shall show no evidence of freezing, defrosting, or mishandling.

3.2.1.1 Boning and trimming. The beef shall be boned and trimmed to remove objectionable material such as bone, cartilage, heavy connective tissue, etc. The boneless trimmed beef shall meet the limitations specified in tables I and II.

3.2.1.2 Handling and storage. Handling and storage of the boned and trimmed 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.

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c. Holding in the frozen state for not more than 120 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.

3.2.2 Potatoes, fresh. Potatoes shall be fresh, clean, sound, and of a white flesh variety suitable for canning. The maximum specific gravity for the potatoes shall be 1.075 with a reducing sugar content of not more than 2.0 percent on a dry weight basis.

3.2.3 Potatoes, dehydrofrozen, diced. Dehydrofrozen potatoes shall be firm, possess a good color and flavor, and be of a white flesh variety suitable for canning. The maximum specific gravity for the potatoes shall be 1.075 with a reducing sugar content of not more than 2.0 percent on a dry weight basis. The potatoes shall be mechanically diced so that the dimensions of the dices will be approximately 1/4 by 1/4 by 3/8 inch.

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

3.2.5 Potatoes, crushed, dehydrated. The dehydrated crushed potatoes shall be processed from sound, well peeled and trimmed potatoes. The dehydrated potatoes shall possess a bright, uniform, white potato color which may vary from light cream to a pale yellow. The potatoes shall not have more than 25 dark brown or black specs per 5 grams. The moisture content shall not exceed 8.0 percent. The potatoes may be treated with FDA approved antioxidants to prevent discoloration. The granulation size shall comply with the following:

- 5 + 5 percent shall be retained on a U.S. Standard No. 8 sieve
- 35 + 5 percent shall be retained on a U.S. Standard No. 20 sieve
- 30 + 5 percent shall be retained on a U.S. Standard No. 40 sieve
- 30 + 5 percent shall pass through a U.S. Standard No. 8 sieve

3.2.6 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.

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3.2.7 Onions, dehydrated, chopped. Dehydrated chopped 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.

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

3.2.9 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.

3.2.10 Pepper, green, sweet, dehydrated. The peppers shall be 1/4-inch dices of sweet bell peppers which have been air-dried, freeze-dried or a combination of each. The pepper dices shall be practically free of seeds, seed cells, and diseased or rotted areas. The pepper dices shall possess a fresh, clean, typical sweet green pepper flavor and odor and a green, with minimal brownish, color. The moisture content shall be not greater than 5 percent.

3.2.11 Pepper, black, ground. Ground black pepper shall have been ground from the deep brown to black, deep-set, wrinkled, immature berries of Piper nigrum L. The ground pepper shall have a characteristic, penetrating odor, a hot, biting, pungent flavor and a light grey to speckled black-grey color. The ground pepper shall contain not less than 2.0 mL of volatile oil per 100 grams of ground black pepper and be of such size that 95 percent shall pass through a U.S. Standard No. 16 sieve.

3.2.12 Bay leaves, ground. Ground bay leaves shall be derived from the dried leaves of Laurus nobilis L., and shall possess a pleasant, aromatic odor and pungent, mildly bitter flavor with a pale green to yellow-green color. The volatile oil content shall be not less than 1.0 mL per 100 grams of ground bay leaves. A minimum of 95 percent, by weight, shall pass through a U.S. Standard No. 30 sieve.

3.2.13 Clove, ground. Ground cloves shall be prepared from the dried, unopened flower buds of Caryophyllus aromaticus L. The powder shall be dark reddish-brown in color and shall possess a strong aromatic odor with a hot pungent taste. The ground cloves shall contain not less than 15.0 mL of volatile oil per 100 grams of a ground clove and be of such size that not less than 95 percent shall pass through a U.S. Standard No. 30 sieve.

3.2.14 Sodium erythorbate. Sodium erythorbate shall comply with the Food Chemicals Codex.

3.2.15 Sodium nitrite. Sodium nitrite shall comply with the Food Chemicals Codex.

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3.2.16 Starch, waxy maize, modified, filling and processing aid (see 6.3). Starch shall be white to off-white, odorless, finely pulverized powder suitable for use as a filling and processing aid in thermostabilized foods. When hydrated at temperatures of 165° to 200°F, the starch shall develop a paste. The initial viscosity of the paste shall be retained under conditions of moderate shear and prolonged holding times. During retorting at temperatures in excess of 200°F, the starch shall undergo extensive to complete breakdown of the initial viscosity. The starch shall be bland, shall demonstrate easy dispersibility, and shall comply with MIL-STD-900.

3.2.17 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 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 Preparation of the cured beef. The beef shall be prepared as follows:

- a. Boned and trimmed beef which meets the requirements of 3.2.1.1 shall be further trimmed, if necessary, to assure compliance with finished product requirements (see 3.6).
- b. The boned and trimmed beef shall be mechanically ground once through a grinder plate, having holes measuring 1/2 inch in diameter, and then uniformly blended with the following cure ingredients. 2/

<u>Ingredient</u>	<u>Pounds per 100 pounds of beef</u>
Water	2.500
Sodium erythorbate	0.050
Sodium nitrite <u>1/</u>	0.015

1/ Sodium nitrite shall be of sufficient strength to assure a complete cure without exceeding 150 parts per million of nitrite in the cured beef.

2/ Alternate processing using mixer-grinder. The boned and trimmed beef shall be coarse ground through a grinder plate, having holes measuring 1 inch or more in diameter, and then uniformly mixed with the cure ingredients in a mixer-grinder. The cured meat shall then be ground once through a grinder plate having holes measuring 1/2 inch in diameter.

- c. The mixture shall be held for sufficient time at an internal temperature of 28° to 40°F to assure a uniform grey color prior to its being blanched.

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- d. The cured ground meat shall be blanched sufficiently to obtain a yield of approximately 65 to 70 percent.

### 3.3.2 Preparation of potatoes.

3.3.2.1 Preparation of fresh potatoes. The fresh potatoes shall be thoroughly cleaned to remove dark and extraneous material, peeled, trimmed, and thoroughly washed. The washed potatoes shall be mechanically diced with dicer settings at approximately 1/4 by 1/4 by 3/8 inch. The potato dices shall be blanched sufficiently to prevent discoloration and to remove excess air. The blanched potatoes shall be immediately cooled with cooling water to the initial temperature of the cooling water and thoroughly drained. The cooled, drained potato dices shall be handled in a manner to prevent discoloration prior to preparation, and filled into the pouches within 4 hours after blanching.

3.3.2.2 Preparation of dehydrofrozen potatoes. Dehydrofrozen potatoes shall be used without further preparation and shall be handled in a manner to prevent discoloration prior to product preparation. Alternatively, the dehydrofrozen potatoes may be thawed in a portion of the product formulation water immediately prior to product preparation.

3.3.3 Filling and processing aid starch preparation. When a filling and processing aid starch is used, a solution (slurry) shall be prepared with the filling and processing aid starch and part of the product formulation water in a concentration adequate to hold ingredients in suspension for uniform distribution during mixing and pumping of product.

3.3.4 Product formulation and preparation. The corned beef hash shall be formulated with the following ingredients:

<u>Ingredient</u>	<u>Percent by weight</u>
Beef, cured, blanched <u>1/</u>	43.500
Potatoes, fresh <u>2/</u>	45.000
Water <u>1/</u>	6.867
Potatoes, crushed, dehydrated <u>4/</u>	1.650
Salt <u>3/</u>	1.240
Onions, dehydrated, chopped	0.720
Sugar, white, granulated	0.600
Garlic powder	0.170
Pepper, green, sweet, dehydrated	0.150
Pepper, black, ground	0.070
Bay leaves, ground	0.025
Clove, ground	0.008

1/ The beef amount is based on a blanching yield of approximately 70 percent. The beef and water percentages shall be adjusted, as necessary, to compensate for blanching yields from 65 to 69 percent.



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- 2/ When dehydrofrozen potatoes are used, the formulation shall consist of 20.489 percent by weight of potatoes and 26.878 percent by weight of water.
- 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 3.6).
- 4/ The total amount of dehydrated crushed potatoes in the formula may be adjusted, if necessary, to accommodate the filling process and/or to assure compliance with the finished product free liquid requirements.

The product shall be prepared as follows:

- a. The ingredients shall be mixed sufficiently to assure a uniform blend, without deforming the potato dices.
- b. The mixture, when prepared with fresh potatoes, shall be heated to 150° to 180°F before filling. The mixture, when prepared with dehydrofrozen potatoes, shall be heated to 150° to 180°F and held in this temperature range, prior to filling, for a time sufficient to allow the potatoes to absorb all of the free water.
- c. The corned beef hash shall be filled into the pouches within 4 hours after mixing. As a final step before filling, a filling and processing aid starch solution (see 3.3.3) may be uniformly blended into the corned beef hash in the amount required to facilitate uniform ingredient distribution in single-stage filling operations when dehydrofrozen potatoes are used. If a cold fill method is used, the prepared hash shall be held at an internal temperature of 28° to 40°F at all times prior to filling into the pouches. If a hot fill method is used (see 3.4), the prepared hash shall be heated and held in the temperature range of 150° to 180°F at all times prior to filling into the pouches.

3.4 Pouch filling and sealing. Each pouch (see 5.1) shall be filled with product to conform to the finished product requirements and to the following requirements:

- a. Each pouch shall be filled and sealed in accordance with the pouch filling and sealing requirements specified for class 3 of MIL-P-44073.
- b. A hot fill system is permitted if compatible with the single-stage or multi-stage filling and sealing method used.
- c. The temperature of the corned beef hash at time of filling shall be as specified (see 3.3.4) for the applicable filling process used.

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d. The ingredients may be filled into the pouch using either a single-stage or multi-stage filling operation.

e. Each filled and sealed pouch shall be in the retort process within 2 hours after sealing.

3.5 Pouch thermoprocessing. The filled and sealed pouches shall be thermo-stabilized by retorting until a sterilization value ( $F_0$ ) of not less than 6 has been achieved. The thermoprocessing operation shall be in compliance with the thermoprocessing requirements for class 3 of MIL-P-44073.

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.
- d. Total weight of cartilage, coarse connective tissue, section of tendons or ligaments, and glandular material, collectively, in any individual pouch shall be not more than 0.35 ounces.
- e. The average net weight shall be not less than 8.0 ounces.
- f. No individual pouch shall have a net weight of less than 7.5 ounces.
- g. Free liquid weight in any individual pouch shall be not more than 0.3 ounces.
- h. At least 75 percent of the potatoes shall be discernible dices.
- i. The product shall have the appearance of a uniform distribution of corned beef and potato dices.
- j. Potato dice texture shall be firm, but not mushy, hard, fibrous, or tough.
- k. The average fat content of the finished product shall not be greater than 8.0 percent and no individual pouch shall have a fat content greater than 10.0 percent.
- l. The salt content of the finished product in any individual pouch shall be not less than 1.0 percent nor greater than 1.7 percent.

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- m. The product shall show no evidence of excessive heating (materially darkened or scorched).
- n. No individual pouch shall contain a bone piece measuring 0.3 inch or more in any dimension.

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 beef component and the finished product shall originate and be produced, processed, and stored in plants regularly operating under the 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.

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 document. 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 document.

4.3 Classification of inspection. 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 document and evaluated for overall appearance and palatability. Any failure to conform to the quality assurance provisions of this document 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.

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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 document or applicable purchase document.

4.5.1.1 Beef examination for condition and cut. All beef shall be examined in either the bone-in or boneless state for conformance to the condition and cut requirements in 3.2.1. Cuts initially examined in the boneless state shall be in the form of whole boneless recognizable cuts. Any nonconforming beef shall be rejected.

4.5.1.2 Boned and trimmed beef examination. After boning and trimming and prior to any further processing or to any freezing, the beef shall be examined for the defects listed in table II. The lot size expressed in terms of pounds shall be declared to the Agricultural Marketing Service (AMS) agent by the contractor. However, the AMS agent reserves the right to declare as a lot a portion of a declared lot, if, in his or her opinion, that portion may be out of compliance with any requirement. The sample unit shall be a minimum of 12 pounds of adjacent boneless beef. The sample size shall be as specified in table I. If all or a portion of the sample unit falls within a larger cut, the entire cut shall be examined. Failure of the beef to meet the acceptance criteria as indicated in table I shall be cause for rejection of the lot. Except for beef rejected because of freezing, defrosting, or not being in excellent condition, the beef may be reworked by the contractor and reoffered for examination. For reexamination, the sampling plan used shall be the one in table I designed for the next larger lot size than the one under which the lot was initially rejected. Beef shall not be reexamined more than one time.

TABLE I. Sampling plan for boned and trimmed beef

<u>Lot size</u> (pounds)	<u>Sample size</u> (No. of sample units)	<u>Defect categories</u>			
		<u>Major</u>		<u>Minor</u>	
		AC	RE	AC	RE
500 or less	20	2	3	5	6
501 to 1,200	32	3	4	7	8
1,201 to 3,200	50	5	6	10	11
3,201 to 10,000	80	7	8	14	15
10,001 to 38,000	125	10	11	21	22
Reinspection lots of 10,001 to 38,000	200	14	15	21	22

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TABLE II. Boned and trimmed beef defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Presence of popliteal, prescapular, prefemoral or any exposed lymph gland measuring 0.5 inch or more in any dimension.
102		Presence of blood clot measuring 1.0 inch or more in any dimension.
	201	Presence of blood clot measuring 0.5 inch or more but less than 1.0 inch in any dimension.
103		Presence of bruise measuring 1.0 inch or more in any dimension.
	202	Presence of bruise measuring 0.5 inch or more but less than 1.0 inch in any dimension.
104		Presence of a bone piece measuring 0.3 inch or more in any dimension.
105		Presence of cartilage measuring 0.5 inch or more in any dimension.
106		Presence of backstrap measuring 1.0 inch or more in one dimension and 0.2 inch or more in a second dimension (when measured at right angles to each other).
	203	Presence of backstrap measuring 0.5 inch or more but less than 1.0 inch in one dimension and 0.2 inch or more in a second dimension (when measured at right angles to each other.)
107		Presence of heavy connective tissue (for example, on the surface of the outside round adjacent to the knuckle, along the skin surface of the strip loin, or the gracilis membrane) measuring 2.0 square inches or more.
	204	Presence of heavy connective tissue (for example, on the surface of the outside round adjacent to the knuckle, along the skin surface of the strip loin, or gracilis membrane) measuring 0.5 square inches or more but less than 2.0 square inches.

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TABLE II. Boned and trimmed beef defects 1/ 2/ (cont'd)

Category		Defect
<u>Major</u>	<u>Minor</u>	
	205	Presence of heavy connective tissue on lower edge of short plate or flank.
	206	Presence of heavy connective (abdominal tunic) tissue on the flank measuring 1.0 inch or more in any dimension.
	207	Presence of membranous portion of diaphragm or membranous covering from skirt, flank, or abdominal section of short plate measuring 3.0 square inches or more.
108		Presence of knuckle cover.
109		Presence of kidney, pizzle eye, prepubic tendon, thymus gland, or hanging tender measuring 1.0 inch or more in one dimension and 0.2 inch or more in a second dimension (when measured at right angles to each other).
	208	Presence of kidney, pizzle eye, prepubic tendon, thymus gland, or hanging tender measuring less than 1.0 inch in longest dimension and 0.2 inch or more in a second dimension (when measured at right angles to each other).
	209	Presence of calcified (scratchy) periosteum measuring 2.0 square inches or more.
	210	Presence of shank, clod, knuckle, or bottom (outside) round with tendinous end showing less than 75 percent lean tissue on a cross-sectional cut surface.
	211	Presence of dehydrated surface measuring 1.0 square inch or more.
	212	Presence of discolored meat (including blood discolored neck meat) measuring 1.0 square inch or more.
	213	Presence of exposed blood vessel measuring 1.0 inch or more in any dimension.
	214	Presence of cod, udder, kidney, or pelvic fat.

1/ Determination of wholesomeness and acceptability of product with respect to the presence of foreign material (e.g. glass, dirt, insect parts, hair, wood, metal) shall be made by a Meat and Poultry Inspection Operations employee.

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2/ Evidence of freezing or defrosting or product not in excellent condition shall cause rejection of the involved lot.

4.5.1.3 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 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, 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 Filled and sealed pouch inspection. Inspection of filled and sealed pouches shall be in accordance with the quality assurance provisions of MIL-P-44073.

4.5.4 Net weight inspection. The net weight of the filled and sealed pouches shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Any individual net weight of less than 7.5 ounces shall be scored as a minor defect. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be S-3, and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5. Results shall be reported to the nearest 0.1 ounce. In addition, the lot shall be rejected if the sample average net weight is less than 8.0 ounces.

4.5.5 Product inspection. The filled and sealed sample pouches shall be held for a minimum of 72 hours at room temperature (65° to 75°F), after completion of the thermoprocessing operation. The pouches shall be heated in 180° to 190°F water for 10 minutes, opened, and inspected for the defects indicated in table III. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 1.5.

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TABLE III. Product defects 1/ 2/

Category	Defect
<u>Major</u>	
101	Total weight of cartilage, coarse connective tissue, section of tendons or ligaments, and glandular material, collectively, in any individual pouch is more than 0.35 ounces.
102	Free liquid in any individual pouch is more than 0.3 ounces. <u>3/</u>
103	Less than 75 percent of the potatoes are discernible dices.
104	Corned beef and potato dices not uniformly distributed throughout the product.
105	Texture of the potato dice is mushy, hard, fibrous, or tough, not firm. <u>4/</u>
106	Product shows evidence of excessive heating (materially darkened or scorched).
107	Presence of a bone piece measuring 0.3 inch or more in any dimension.

1/ The presence of foreign material (e.g. dirt, insect parts, hair, wood, glass, metal), foreign odor or flavor (e.g. 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 in palatability and overall appearance shall be cause for rejection of the lot. (This comparison shall be performed only when deemed necessary by an Agricultural Marketing Service (AMS) agent.)

3/ To determine the weight of free liquid in a pouch, the sealed pouch shall be heated in 180° to 190°F water for 10 minutes. Remove the pouch from the hot water, cut top of pouch and drain any free liquid into a suitable, tared container and weigh. The weight of free liquid shall be reported to the nearest 0.1 ounce.

4/ Examination for appearance and texture conformance of the potato dice shall be made following the determination of free liquid.



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4.5.6 Fat and salt content testing. The unopened sample pouches shall be warmed in a water bath to melt fat adhering to the inside of the pouches. The sample pouches shall be opened and the entire contents of each pouch shall be separately blended in a Waring blender or equivalent. The fat and salt content of the product from each pouch in the sample shall be determined in accordance with the Official Methods of Analysis of the Association of Official Analytical Chemists, Chapter: Meat and Meat Products. The test results shall be reported to the nearest 0.1 percent. Any result failing to conform to the fat or salt requirement in 3.6 shall be classified as a major defect. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 1.5.

4.5.7 Packaging inspection. Inspection of packaging shall be in accordance with the quality assurance provisions of MIL-P-44073.

## 5. PACKAGING

5.1 Packaging. Packaging shall be in accordance with the requirements of MIL-P-44073.

## 6. NOTES

6.1 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this document.
- b. When a first article is required (see 3.1, 4.4, and 6.2).
- c. Provisions for approved preproduction samples (see 3.6.1 and 6.2).

6.2 First article. When a first article sample 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 include specific instructions in all acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.3 Starch, waxy maize, modified, filling and processing aid. Shur-Fil<sup>R</sup> CS-500 starch, A.E. Staley Mfg. Co., Decatur, IL 62525 has been found to be satisfactory in holding ingredients in suspension for uniform distribution during mixing and pumping of product for single-stage filling operations.

6.4 Subject term (key word) listing.

Beef  
Food processing  
Meal, Ready-To-Eat  
Potatoes  
Thermostabilized

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6.5 Changes from previous issue. Asterisks 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. 8940-0655

Review activities:

Army - MD, TS  
Navy - MC, MS  
DP - SS



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