

MIL-C-44209  
30 January 1986

## MILITARY SPECIFICATION

### CHICKEN STEW, 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 chicken stew in flexible packages for use as a component of the Meal, Ready-to-Eat, Individual and Meal, Flight Feeding, Individual.

#### 2. APPLICABLE DOCUMENTS

2.1 Government documents. Unless otherwise specified, the following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this document to the extent specified herein.

### 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.

MIL-C-44209

STANDARDS

MILITARY

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

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

OTHER GOVERNMENT DOCUMENTS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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

U.S. Standard of Identity for Cream Cheese

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

U.S. DEPARTMENT OF AGRICULTURE (USDA)

Poultry Products Inspection Regulations

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

U.S. Standards for Grades of Frozen Carrots

U.S. Standards for Grades of Frozen Peas

(Application for copies should be addressed to the Chief, Processed Products Branch, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, DC 20250.)

ENVIRONMENTAL PROTECTION AGENCY (EPA)

National Interim Primary Drinking Water Regulations

(Application for copies should be addressed to the Office of Drinking Water WH550, Environmental Protection Agency, Washington, DC 20460.)

MIL-C-44209

2.2 Other publications. Unless otherwise specified, the following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this document to the extent specified herein.

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.)

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, 375 Sutter Street, Suite 700, San Francisco, CA 94108.)

NATIONAL ACADEMY OF SCIENCE

Food Chemical Codex

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

(Technical society and technical association documents are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

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 shall take precedence.

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 and insect infestation, extraneous material, off-odors, off-flavors, and off-colors.

## MIL-C-44209

3.2.1 Chicken. The chicken shall be prepared from chilled or frozen ready-to-cook fowl (mature female chicken) which has been processed in accordance with USDA Poultry Products Inspection Regulations. All chicken (raw or cooked) shipped between plants shall be accompanied by a USDA Agricultural Marketing Service (AMS) Poultry Division Grading Branch Certificate to certify class and condition of the product and either the initial chilling date or initial freezing (in-storage) date.

3.2.1.1 Chicken, chilled. Raw chicken, in either bone-in or boneless form, received in the chilled state shall not have been previously frozen and shall have been held at a temperature not to exceed 40°F for a period of time not to exceed 4 days following initial chilling and prior to preparation and further processing (see 3.3).

3.2.1.2 Chicken, frozen. Raw chicken, in either bone-in or boneless form, received in the frozen state shall have been held at a temperature not to exceed 0°F for a period of time not to exceed 120 days following initial freezing and prior to preparation and further processing (see 3.3).

3.2.1.3 Chicken, cooked, frozen. Chicken received in a frozen, cooked state shall be prepared from chilled chicken that complies with 3.2.1 and 3.2.1.1. Chicken shall be processed in accordance with 3.3.1, 3.3.1.1 and 3.3.1.2. Cooked chicken, in either log or dice form, shall be packaged and vacuum-sealed in water-impermeable material having an oxygen permeability rate of not more than 10 cc of oxygen per square meter per 24 hours per mil thickness at 73°F and 0 percent relative humidity and shall be frozen to 0°F or below within 72 hours. The packaged, frozen, cooked chicken shall have been held at 0°F or below for a period not to exceed 30 days prior to pouch filling (see 3.4). Product compliance with processing and packaging requirements shall be certified by the ingredient supplier.

3.2.2 Potatoes. Potatoes shall be either fresh or dehydro-frozen and shall meet the requirements of 3.2.2.1 or 3.2.2.2.

3.2.2.1 Potatoes, fresh. The potatoes shall be fresh, firm 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.

3.2.2.2 Potatoes, diced, dehydro-frozen. The dehydro-frozen potatoes shall be firm, have 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 of the latest season's crop. The potatoes shall be mechanically diced to approximately 3/8 by 3/8 by 1/2 to 3/4 inch dimensions.

3.2.3 Carrots. Carrots shall be either fresh or frozen and shall meet the requirements of 3.2.3.1 or 3.2.3.2.

## MIL-C-44209

3.2.3.1 Carrots, fresh. The carrots shall be fresh, firm, of good color, and of a variety suitable for canning.

3.2.3.2 Carrots, diced, frozen. The frozen diced carrots shall comply with the U.S. Grade A requirements of the U.S. Standards for Grades of Frozen Carrots and shall be of the latest season's crop. The carrots shall be mechanically diced to approximately 3/8 by 3/8 by 3/8 inch dimensions.

3.2.4 Broth, chicken. Chicken broth may be frozen or canned (thermo-stabilized). The broth shall be clear, essentially fat free with percent solids sufficient to comply with the solids requirements in the sauce formulation (see 3.3.4). The broth shall have a characteristic mild chicken broth odor and flavor and may contain flavor enhancers in accordance with the Poultry Products Inspection Regulations. The chicken broth shall be produced in a USDA inspected plant in accordance with Poultry Products Inspection Regulations, and when frozen shall have been held at 0°F or below for a period not to exceed 75 days prior to sauce formulation.

3.2.5 Starch, modified, high opacity. The high opacity starch shall be white, odorless, finely pulverized, modified maize food starch for use in canned 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. It 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.

3.2.6 Fat, chicken, frozen. The frozen chicken fat shall have a characteristic clear yellow color, mild chicken fat odor and flavor. The chicken fat may contain antioxidants approved by the Food Safety Inspection Service (FSIS) of the USDA. The chicken fat shall have a peroxide value not to exceed 6 meq./kg, a free fatty acid value not to exceed 0.50 percent expressed as oleic acid, and a moisture content not to exceed 0.25 percent. The chicken fat shall be produced in a USDA inspected plant in accordance with Poultry Products Inspection Regulations and shall have been held at 0°F or below for a period not to exceed 75 days prior to sauce formulation.

3.2.7 Cheese, cream, dehydrated. The dehydrated cream cheese shall be derived from fresh cream cheese complying with the U.S. Standard of Identity for Cream Cheese. The dehydrated cheese shall be white to light cream in color; uniform in appearance and composition; and possess a characteristic, pleasing, and desirable flavor. The product shall be free flowing, free from lumps that do not fall apart under light finger pressure, and free from specks or burnt particles. The dehydrated cheese shall contain not more than 3.0 percent moisture and not less than 70 percent milk fat.

## MIL-C-44209

3.2.8 Onions, chopped, dehydrated. The dehydrated chopped onions shall be fancy grade as defined in the Official Standards and Methods of the American Dehydrated Onion and Garlic Association for Dehydrated Onion and Garlic Products.

3.2.9 Peas, green. Peas shall be either fresh or frozen and shall meet the requirements of 3.2.9.1 or 3.2.9.2.

3.2.9.1 Peas, green, fresh. The green peas shall be fresh, sweet, and of a variety suitable for canning. The shelled peas shall be well-formed, bright, young, tender, and of such size as not to pass through a 9/32 inch sieve.

3.2.9.2 Peas, green, frozen. Frozen green peas shall comply with the U.S. Grade A requirements of the U.S. Standards for Grades of Frozen Peas and shall be of the latest season's crop.

3.2.10 Shortening, vegetable, powdered. The powdered vegetable shortening shall consist of components which, when combined, will serve, as a product whitening agent. The powdered shortening, when used as an ingredient in this product, shall withstand the conditions of thermoprocessing specified in this document without browning. A typical analysis of the powdered shortening follows:

Fat	75.00 percent $\pm$ 1.50 percent
Protein	5.50 percent $\pm$ 0.50 percent
Carbohydrates	15.00 percent $\pm$ 1.00 percent
Moisture	2.00 percent maximum

3.2.11 Celery, sliced, dehydrated. The dehydrated celery slices shall be obtained from clean, sound Pascal type celery. The celery shall be approximately 3/8 inch cross-cut stalk slices with no leaf cuts. The slices shall be free flowing and have bright uniform color. The dehydrated celery shall have a moisture content not in excess of 4.5 percent and a sulfur dioxide content of  $750 \pm 250$  ppm.

3.2.12 Salt. Salt shall be non-iodized, free flowing, white, refined sodium chloride with or without anti-caking agents.

3.2.13 Lecithin. Lecithin shall comply with the Food Chemicals Codex.

3.2.14 Pepper, white, ground. Ground white pepper shall be derived from the dried mature berries of Piper nigrum L. from which the outer covering or the outer and inner coverings have been removed. The ground white pepper shall have a characteristic penetrating odor, a hot biting pungent flavor, and a light color. The white pepper shall contain not less than 1.0 mL of volatile oil per 100 grams of ground white pepper and be of such size that not less than 95 percent shall pass through a U.S. Standard No. 40 sieve.

## MIL-C-44209

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

3.2.16 Sage, ground. Ground sage shall be derived from the dried leaves of Salvia officinalis L. The sage shall be green to grayish-green in color and have a strong fragrant and aromatic odor, and a slightly bitter taste. The sage shall contain not less than 1.5 mL of volatile oil per 100 grams of ground sage and be of such size that not less than 95 percent shall pass through a U.S. Standard No. 20 sieve.

3.2.17 Thyme, ground. Ground thyme shall be derived from the dried leaves and flavoring tops of Thymus vulgaris L., and shall have a fragrant, aromatic odor and minty flavor. The thyme shall contain not less than 0.8 mL of volatile oil per 100 grams of ground thyme and be of such size that not less than 95 percent shall pass through a U.S. Standard No. 30 sieve.

3.2.18 Allspice, ground. Ground allspice shall be derived from the dried, nearly ripe fruit of Pimenta officinalis L. and shall have a fragrant clove-like aroma, strongly aromatic, pungent, clove-like flavor, and a dark reddish-brown color. Allspice shall contain not less than 3.0 mL of volatile oil per 100 grams of ground allspice with 80.0 percent eugenol as a principal constituent. A minimum of 95 percent, by weight, shall pass through a U.S. Standard No. 25 sieve.

3.2.19 Sodium tripolyphosphate. Sodium tripolyphosphate shall comply with the Food Chemicals Codex.

3.2.20 Starch, filling and processing aid (see 6.3). The filling and processing aid shall be white, odorless, finely pulverized, modified waxy maize starch for use as a filling and processing aid in canned, retorted foods and shall comply with MIL-STD-900. During retort temperatures of 165° to 200°F, the starch shall form a clear, bland paste that retains its initial high viscosity under conditions of moderate shear and prolonged holding times. During the retort process the starch shall thin out and lend no appreciable viscosity to the final product.

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

3.2.22 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.

## MIL-C-44209

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

3.3.1 Chicken preparation. The chicken shall be prepared as follows:

- a. The chicken shall be made boneless and skinless. The wing tips, giblets, neck, feet, and viscera shall be excluded. The boned meat shall be free of pin feathers and of skin, blood clots, bruises, blemishes, ligaments, tendons, coarse connective tissue, cartilage and bone greater than 0.3 inch in any dimension. The boneless meat shall be comprised, by weight, of not less than 50 percent, but not more than 60 percent, white meat with the remaining percentage dark meat.
- b. The boned and trimmed chicken meat shall be mechanically coarse ground through a grinder plate having kidney shaped openings measuring not less than 2 inches in the shortest dimension. The grinder shall be equipped with a 2-blade knife.
- c. The chicken meat shall be ground within 24 hours following boning. The chicken meat shall be maintained in the temperature range of 28° to 40°F during this 24 hour period.

3.3.1.1 Chicken log preparation and processing. The chicken logs shall be prepared and processed as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Chicken meat	95.75
Ice or ice water	3.00
Salt	1.00
Sodium tripolyphosphate	0.25

a. The coarse ground (chunked) chicken meat shall be mechanically vacuum mixed with the salt and sodium tripolyphosphate. The mixing shall continue until the mixture exhibits a sticky (tacky) consistency. Time from grinding to mixing shall not exceed 4 hours. The ground chicken meat shall be maintained in the temperature range of 28° to 40°F during this 4 hour time period.

b. The mixed meat shall immediately be mechanically stuffed tightly into prestuck, regenerated cellulose casings of a size to accommodate the finished product meat dimension requirement. The stuffed meat logs shall be in the cooking process within 4 hours after being stuffed. (This period of time may be extended for up to 24 hours, provided the meat logs are maintained in the temperature range of 28° to 40°F).



## MIL-C-44209

c. The chicken logs shall be cooked in a cookhouse (smoke house without smoke) or by other commercially acceptable cook methods to provide a product meeting the finished product drained weight and other requirements.

d. The cooked chicken logs shall be cooled to 40°F or below within 4 hours following the cooking process and shall be held not longer than 48 hours at a temperature not to exceed 40°F prior to dicing (see 3.3.1.2).

e. If the cooked chicken is to be stored in the frozen log form (see 3.2.1.3), within 4 hours following the cooking process, the logs shall be packaged and vacuum-sealed in packaging material complying with the requirements specified in 3.2.1.3. Within 72 hours of packaging, the logs shall be frozen to 0°F or below. The packaged, frozen, cooked chicken shall be maintained at 0°F or below for a period not to exceed 30 days prior to pouch filling (see 3.4).

3.3.1.2 Dicing of cooked chicken logs. The cooked chicken logs shall be mechanically diced to yield uniform dices of approximately 3/8 to 1/2 by 3/8 to 1/2 by 1/2 inch dimensions. Fines shall be eliminated so that not less than 95 percent, by weight, of dices are retained on a U.S. Standard 1/4-inch sieve. The dices shall be held not longer than 4 hours in the temperature range of 28° to 40°F until filled into the pouches (see 3.4).

### 3.3.2 Vegetable preparation.

#### 3.3.2.1 Potato preparation.

3.3.2.1.1 Fresh potato preparation. The fresh potatoes shall be washed, sorted, peeled and trimmed. The potatoes shall be mechanically diced to approximately 3/8 by 3/8 by 1/2 to 3/4 inch dimensions, and the dices blanched sufficiently to prevent discoloration and to remove excess air. The blanched potatoes shall be cooled rapidly to 45°F or lower by washing with cold water and held at a temperature of 45°F or below for not longer than 4 hours after blanching and in a manner to prevent discoloration prior to product preparation.

3.3.2.1.2 Dehydrofrozen potato preparation. The dehydrofrozen potatoes shall be used without further preparation and handled in a manner to prevent discoloration prior to product preparation.

3.3.2.2 Carrot preparation. The carrots shall be washed, sorted, peeled and trimmed. The carrots shall be mechanically diced to approximately 3/8 by 3/8 by 3/8 inch dimensions, and then blanched sufficiently to prevent discoloration and to remove excess air. If the blanched carrots are not filled into a pouch immediately after blanching, they shall be cooled rapidly to 45°F or lower by washing with cold water and held at a temperature of 45°F or below for not longer than 4 hours after blanching. The blanched carrots shall be handled in a manner to prevent discoloration and shall be filled within 4 hours.

## MIL-C-44209

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 cold water in a concentration adequate to hold ingredients in suspension for uniform distribution during mixing and pumping of product.

3.3.4 Sauce formulation and preparation. The sauce shall be formulated and prepared as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Chicken broth <u>1/</u>	78.85
Starch, modified, high opacity	5.50
Chicken fat	4.00
Cream cheese	4.00
Onions, chopped, dehydrated	3.75
Shortening, vegetable, powdered	2.00
Celery, sliced, dehydrated	1.00
Salt <u>2/</u>	0.50
Lecithin	0.25
Pepper, white, ground	0.08
Bay leaves, ground	0.02
Sage, ground	0.02
Thyme, ground	0.02
Allspice, ground	0.01

1/ The chicken broth shall be adjusted to 3.0 to 3.5 percent solids.

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

a. A slurry shall be made using part of the chicken broth, the starch and the powdered vegetable shortening.

b. An emulsion shall be made by mixing the remainder of the chicken broth, the chicken fat, and the lecithin. The emulsion shall be heated to a boil in a steam jacketed kettle with continuous and vigorous agitation to attain maximum emulsification of the fat.

c. To the emulsion, add the cream cheese and stir until the cream cheese is uniformly dispersed.

d. The emulsion shall be cooled to 180°F or lower and the remaining ingredients added. The emulsion shall be stirred to assure that the salt is dissolved, the dehydrated vegetables are rehydrated and the spices are uniformly dispersed.

## MIL-C-44209

e. The slurry shall be added to the emulsion and final mixture heated to 150° to 180°F and held in this temperature range for 5 minutes.

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

g. The sauce shall be filled within 4 hours after cooking. As a final step before filling, a filling and processing aid starch solution (see 3.3.3) may be uniformly blended into the sauce in the amount required to facilitate uniform ingredient distribution in single-stage filling operations when dehydrofrozen potatoes are used. If a hot fill method is used (see 3.4), the prepared sauce shall be held in the temperature range of 150° to 180°F at all times prior to filling into the pouches. If a cold fill method is used, the prepared sauce shall be cooled immediately and held in the temperature range of 28° to 40°F at all items prior to filling into the pouches.

3.3.5 Product preparation. The chicken, potatoes, carrots, peas and sauce shall be combined in the following proportions using either a single-stage or multi-stage fill.

<u>Ingredients</u>	<u>Percent by weight</u>
Sauce	51.23
Chicken, diced	28.30
Potatoes, diced <u>1/</u>	11.32
Carrots, diced	7.55
Peas, green	1.60

1/ When dehydrofrozen potatoes are used, the 11.32 percent by weight shall consist of 5.66 percent by weight of dehydrofrozen potatoes and 5.66 percent by weight of water.

3.4 Pouch filling and sealing. Each pouch (see 5.1) shall be filled with product such as 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 1 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 chicken stew at time of filling shall be as specified (see 3.3.1.2, 3.3.2, and 3.3.4) for the applicable filling process used.

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

## MIL-C-44209

e. Each filled and sealed pouch shall be in the retort process within 1 hour 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 1 of MIL-P-44073.

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

- a. There shall be not foreign material such as, but not limited to, dirt, insect parts, hair, wood, paper, paint, glass, or metal.
- b. There shall be not foreign odors or flavors such as, but not limited to, burnt, scorched, stale, sour, rancid, musty or moldy.
- c. There shall be no color foreign to the product.
- d. There shall be no feathers or feather parts.
- e. Total weight of skin, bone, cartilage, coarse connective tissue, section of tendons or ligaments, and discolored meat, collectively, shall be not more than 0.20 ounce.
- f. The average net weight shall be not less than 8.0 ounces.
- g. No individual pouch shall contain less than 7.5 ounces of product.
- h. The average drained weight of chicken shall be not less than 1.7 ounces.
- i. No individual pouch shall contain less than 1.5 ounces of drained chicken.
- j. The average drained weight of vegetables shall be not less than 2.5 ounces.
- k. No individual pouch shall contain less than 2.3 ounces of drained vegetables.
- l. At least 75 percent of the chicken shall be discernible chicken dices.
- m. Texture of the chicken dices shall not be dry, rubbery, or mushy.
- n. Texture of the potatoes shall not be mushy, hard, fibrous, or tough.
- o. Texture of carrots and peas may be soft, but shall not be hard, fibrous, tough, or mushy.

## MIL-C-44209

- p. Sauce consistency shall be smooth, without lumps, and shall not be excessively thick or thin.
- q. The average fat content shall be not greater than 6.0 percent.
- r. The fat content of the product in any individual pouch shall be not greater than 8.0 percent.
- s. The salt content of the product in any individual pouch shall be not greater than 1.0 percent nor less than 0.5 percent.
- t. The product shall show no evidence of excessive heating (materially darkened or scorched).

3.6.1 Palatability. The 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 poultry component and the finished product shall originate and be produced, processed, and stored in plants regularly operating under Poultry Products Inspections Regulations of the U.S. Department of Agriculture. The dairy component shall originate from a dairy plant which is approved by the Dairy Grading Section, Dairy Division, Agricultural Marketing Service, USDA.

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 the 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 USDA. The USDA will determine the degree of supervision 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).

## MIL-C-44209

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.

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 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, or compliance be evident by examination of pertinent labels, markings, U.S. Grade Certificates, certificates of analyses, or other such valid documents acceptable to the inspection agency. In addition, prior to use, each ingredient shall be examined organoleptically, as necessary, to determine conformance to the condition requirements. Any nonconformance to any 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 boiling water for 10 minutes, opened, and inspected for the defects indicated in table I. The

## MIL-C-44209

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.

TABLE I. Product defects 1/ 2/

Category	Defect
<u>Major</u>	
101	Presence of feathers or feather parts.
102	Total weight of skin, bone, cartilage, coarse connective tissue, section of tendons or ligaments, and discolored meat, collectively, is more than 0.20 ounce.
103	Drained weight of chicken in a pouch is less than 1.5 ounces. <u>3/</u> <u>4/</u>
104	Drained weight of vegetables in a pouch is less than 2.3 ounces. <u>3/</u> <u>4/</u>
105	Less than 75 percent of the chicken consists of discernible chicken dices. <u>5/</u>
106	Texture of chicken dices is dry, rubbery, or mushy. <u>5/</u>
107	Texture of potatoes is mushy, hard, fibrous, or tough. <u>5/</u>
108	Texture of peas and carrots is hard, fibrous, tough or mushy. <u>5/</u>
109	Sauce consistency is lumpy or is excessively thick or thin.
110	Product shows evidence of excessive heating (materially darkened or scorched)

1/ Presence of foreign material (e.g., glass, dirt, insect part, hair, wood, metal), foreign odor or flavor (e.g., burnt, scorched, stale, sour, rancid, musty, moldy), or foreign color shall be cause for rejection of the lot.

## MIL-C-44209

- 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. (This comparison shall be performed only when deemed necessary by an AMS agent.)
- 3/ To determine drained weight, the free liquid in the pouch shall be poured off and the remaining contents shall be poured into a flat bottom container. A minimum of three times the pouch'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 gently agitated such as to liquify rendered fat and to remove the sauce without breaking the chicken dices or vegetables. The contents shall then be poured into a U.S. Standard No. 7 (0.111 inch) sieve in a manner that will distribute the product over the sieve without breaking the chicken dices or vegetables. 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 of the chicken and the vegetables shall be determined individually and shall be reported to the nearest 0.1 ounce.
- 4/ The lot shall be rejected if the sample average drained weight of chicken is less than 1.7 ounces or if the sample average drained weight of vegetables is less than 2.5 ounces.
- 5/ Examination for appearance and texture conformance of the chicken dices, potatoes, and other vegetables shall be made of representative pieces immediately following the determination of drained weight.

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 Analyses of the Association of Official Analytical Chemists, Chapter: Meat and Meat Products. 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.



## MIL-C-44209

## 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 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, 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.

## Custodians:

Army - GL  
Navy - SA  
Air Force - 50

## Preparing activity:

Army - GL  
Project No. 8940-0516

## Review activities:

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

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-C-44209	2. DOCUMENT TITLE Chicken Stew, Thermostabilized, For Meal, Ready-To-Eat
3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION (Mark one) <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify): _____
5. ADDRESS (Street, City, State, ZIP Code)	
5. PROBLEM AREAS	
a. Paragraph Number and Wording:	
b. Recommended Wording:	
c. Reason/Rationale for Recommendation:	
6. REMARKS	
7a. NAME OF SUBMITTER (Last, First, MI) - Optional	8. WORK TELEPHONE NUMBER (Include Area Code) - Optional
9. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional	10. DATE OF SUBMISSION (YYMMDD)