

INCH-POUND

MIL-F-44062B

9 April 1990

SUPERSEDING

MIL-F-44062A

30 September 1983

## MILITARY SPECIFICATION

### FRANKFURTERS, BEEF, 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 specification covers thermostabilized beef frankfurters 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 document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.1).

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 Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8905

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

MIL-F-44062B

SPECIFICATIONS

MILITARY

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

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

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 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)

Meat and Poultry Inspection Regulations

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

Institutional Meat Purchase Specifications for Sausage Products, Series 800

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

MIL-F-44062B

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

Federal Food, Drug, and Cosmetic Act and regulations promulgated there-  
under (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 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.)

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.

## MIL-F-44062B

## 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 such that the frankfurters will conform to the requirements in 3.6.

3.2.2 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.

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

3.2.4 Mustard flour. Mustard flour shall be a bright yellow powder from a blend derived from the endosperm of the seed of Brassica hirta and Brassica juncea. Mustard flour shall contain not less than 0.4 mL of volatile oil per 100 grams of mustard flour and be of such size that not less than 95 percent shall pass through a U.S. Standard No. 60 sieve.

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

3.2.6 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 gray to speckled black-gray 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 not less than 95 percent shall pass through a U.S. Standard No. 16 sieve.

3.2.7 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.

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

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

## MIL-F-44062B

3.2.10 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 specification. 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 frankfurters. The frankfurters shall be prepared to conform to the requirements in 3.6 and to the Institutional Meat Purchase Specifications for Sausage Products (IMPS) Item No. 800, formula D (all beef) product, color A, style C, chilled state, except that the beef shall be coarse ground, and the frankfurters shall be formulated as specified below, be of uniform diameter and shall not exceed 4.5 inches in length. The frankfurters shall be maintained at a temperature range of 28° to 40°F prior to packaging and thermoprocessing. The frankfurters shall be packaged into pouches and thermo-processed within 14 days after date of initial certification.

<u>Ingredient</u>	<u>Percent by weight</u>
Beef, coarse ground	95.088
Salt <u>1/</u>	2.500
Sugar, white, granulated	1.000
Mustard flour	0.950
Sodium tripolyphosphate	0.250
Pepper, black, ground <u>2/</u>	0.100
Pepper, red, ground <u>2/</u>	0.050
Sodium erythorbate	0.050
Sodium nitrite	0.012

1/ Formulation weight exceeds finished product salt requirements so as to compensate for loss during processing. 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).

2/ Soluble spices on a salt or sugar carrier or in emulsion form may be substituted for ground spices on a 1:1 basis.

The prepared frankfurters shall be processed in a smokehouse to produce a finished product with a heavy smoke flavor, color, and aroma.

## MIL-F-44062B

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. Each pouch shall contain four frankfurters.

3.5 Pouch thermoprocessing. The filled and sealed pouches shall be thermoprocessed 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, stale, sour, rancid, or moldy.
- c. There shall be no color foreign to the product.
- d. The frankfurter links shall fit into the pouch without abnormal distortion of the links.
- e. Frankfurters shall not be split or ruptured more than 1/2 inch in any dimension.
- f. The frankfurters shall possess a heavy smoke flavor, color and aroma.
- g. The frankfurters shall not be burnt or scorched.
- h. The fat content of the finished product in any individual pouch shall be not greater than 23.0 percent.
- i. The salt content of the finished product in any individual pouch shall be not less than 1.7 percent nor greater than 2.5 percent.
- j. The average net weight shall be not less than 4.6 ounces.
- k. No individual pouch shall have a net weight of less than 4.2 ounces.
- l. The average drained weight of the frankfurters shall be not less than 4.3 ounces.

MIL-F-44062B

- m. The drained weight of the frankfurters in any individual pouch shall be not less than 4.0 ounces.
- n. The moisture content of the finished product in any individual pouch shall be not greater than 60.3 percent.
- o. The product shall show no evidence of excessive heating (soft, mushy, abnormally distended, or shrunk).

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 meat 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 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.

## MIL-F-44062B

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 Frankfurter examination. Examination of the frankfurters shall be made to determine compliance with the requirements of 3.3.1. In addition, records of formulation, temperatures, and holding times shall be maintained. When frankfurters are obtained from a contractor other than the prime contractor, the frankfurters shall receive a source inspection to determine compliance with 3.3.1 and shall be so certified by the USDA. Failure to comply with requirements shall be cause for rejection of the involved product.

4.5.1.2 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.

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 examination. 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 4.2 ounces shall be classified 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. The 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 4.6 ounces.



## MIL-F-44062B

4.5.5 Product and drained weight inspection.

4.5.5.1 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. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The sample size shall be as indicated by the sampling plan specified in table I. The contents shall be inspected for the defects indicated in table II.

TABLE I. Double sampling plan for product inspection 1/

<u>Lot size</u> (pouches)	<u>Sample size</u> (pouches)	<u>Cumulative</u> sample	<u>Defect categories</u>			
			<u>Major</u>		<u>Minor</u>	
			AC	RE	AC	RE
0 to 3200	8	--	2/	2/	0	2
	8	16	2/	2/	1	2
3201 to 35000	13	--	2/	2/	0	3
	13	26	2/	2/	3	4
35001 to 50000	20	--	0	1	1	4
	20	40	1	2	4	5

- 1/ a. If the number of defects found in the first sample is equal to or less than the acceptance number, the lot shall be accepted.
- b. If the number of defects found in the first sample equals or exceeds the rejection number, the lot shall be rejected.
- c. If the number of defects found in the first sample exceeds the acceptance number but is less than the rejection number, the second sample shall be inspected. Defects found in the first and second samples shall be combined and if the number of defects in the cumulative sample equals or exceeds the rejection number, the lot shall be rejected.
- 2/ Examination for major defects requires use of the next larger sample size (for example, lot size = 20,000 pouches; select 20 samples. Examine 13 of 20 sample pouches for major and minor defects, and the remaining 7 pouches for major defects only).

## MIL-F-44062B

TABLE II. Product defects 1/ 2/

Category	Defect
<u>Major</u> <u>Minor</u>	
101	Pouch does not contain four frankfurters
102	Frankfurters do not possess a heavy smoke flavor, color, and aroma
103	Frankfurters are burnt or scorched
104	Frankfurters are split or ruptured more than 1/2 inch in any dimension
105	Product shows evidence of excessive heating (soft, mushy, abnormally distended, or shrunk)
201	Fit of frankfurters in pouch causes abnormal distortion of the frankfurters

- 1/ The presence of foreign material (for example, dirt, insect parts, hair, wood, glass, metal), foreign odor or flavor (for example, 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 a USDA agent).

4.5.5.2 Drained weight 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 approximately 10 minutes, opened, and inspected. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The sample size shall be as indicated by the double sampling plan specified in table III. The drained weight shall be determined and inspected for the defect indicated in table IV.

TABLE III. Double sampling plan for drained weight inspection 1/

Lot size (pouches)	Sample size (pouches)	Cumulative sample	Acceptance number	Rejection number
0 to 500,000	20	--	0	2
	20	40	1	2

## MIL-F-44062B

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

TABLE IV. Drained weight defect 1/

Category	Defect
<u>Major</u>	
101	Drained weight of frankfurters in a pouch is less than 4.0 ounces <u>2/</u>

- 1/ To determine drained weight, the pouch contents shall be poured into a flat-bottom container. A minimum of three times the pouch'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 gently agitated so as to liquify rendered fat without breaking the frankfurters. 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 frankfurters. 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 approximately a 45° angle and allowed to drain for 2 minutes before determining the drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.1 ounce.
- 2/ If the sample average drained weight is less than 4.3 ounces, the lot shall be rejected.

4.5.6 Fat, moisture, 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 Blendor or equivalent. The fat, moisture, 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. Test results shall be reported to the nearest 0.1 percent. 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. Any result failing to conform to the fat, moisture, or salt requirements in 3.6 shall be classified as a major defect and shall be cause for rejection of the lot.

## MIL-F-44062B

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

(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).

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

6.3 Subject term (key word) listing.

Canned food  
Combat field feeding  
Food Processing  
Hot dog  
Meat  
Operational rations  
Pouch  
Shelf stable

6.4 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.

MIL-F-44062B

Custodians:

Army - GL  
Navy - SA  
Air Force - 50

Preparing activity:

Army - GL  
(Project 8905-1078)

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>		<b>1. DOCUMENT NUMBER</b> MIL-F-44062A	<b>2. DOCUMENT DATE (YYMMDD)</b> 90/04/09
<b>3. DOCUMENT TITLE</b> FRANKFURTERS, BEEF, THERMOSTABILIZED, FOR MEAL, READY-TO-EAT			
<b>4. NATURE OF CHANGE</b> (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
<b>5. REASON FOR RECOMMENDATION</b>			
<b>6. SUBMITTER</b>			
<b>a. NAME (Last, First, Middle Initial)</b>		<b>b. ORGANIZATION</b>	
<b>c. ADDRESS (Include Zip Code)</b>		<b>d. TELEPHONE (Include Area Code)</b> (1) Commercial (2) AUTOVON (If applicable)	<b>7. DATE SUBMITTED (YYMMDD)</b>
<b>8. PREPARING ACTIVITY</b>			
<b>a. NAME</b> U.S. Army Natick Research, Development, and Engineering Center ATTN: STRNC-ES		<b>b. TELEPHONE (Include Area Code)</b> (1) Commercial (508)651-5221 (2) AUTOVON 8-256-5221	
<b>c. ADDRESS (Include Zip Code)</b> Kansas Street Natick, MA 01760-5014		<b>IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:</b> Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	