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MILITARY SPECIFICATION

COCOA BEVERAGE POWDER

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

1. SCOPE

1.1 Scope. This document covers cocoa beverage powder for use by the Department of Defense as an item of general issue and as a component of operational rations.

1.2 Classification. The product shall be of the following types and classes, as specified (see 6.1).

Type I	- Regular
Type II	- Commercial
Class	- Fortified
Class	- Nonfortified

2. APPLICABLE DOCUMENTS

2.1 Government documents

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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Soldier Systems Command, Natick Research, Development, and Engineering Center, ATTN: SSCNC-WRE, Natick, MA 01760-5018 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 8960

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

SPECIFICATIONS

FEDERAL

- L-P-378 - Plastic Sheet and Strip, Thin Gauge, Polyolefin
- QQ-A-1876 - Aluminum Foil
- PPP-B-566 - Boxes, Folding, Paperboard
- PPP-B-636 - Boxes, Shipping, Fiberboard

MILITARY

- MIL-L-10547 - Liners, Case, and Sheet, Overwrap; Water-Vaporproof or Waterproof, Flexible
- MIL-L-35078 - Loads, Unit: Preparation of Semiperishable Subsistence Items; Clothing, Personnel Equipment and Equipage; General Specifications for

STANDARDS

FEDERAL

- FED-STD-595 - Color

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage

(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.)

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

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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

(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)

U.S. Standards for Grades of Nonfat Dry Milk (Spray Process)

General Specification for Approved Dairy Plants and Standards for Grades of Dairy Products

(Application for copies should be addressed to the Dairy Standardization Section, Dairy Division, Room 2750-S, Agricultural Marketing Service (AMS), U.S. Department of Agriculture, Washington, DC 20250.)

* 2.2 Other 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 specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issues of the non-

government documents which are current on the date of the solicitation.

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 ASSOCIATION OF CEREAL CHEMISTS

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 VITAMIN CHEMISTS

Methods of Vitamin Assay

(Application for copies should be addressed to the Interscience Publishers Inc., Division of John Wiley and Sons, Inc., 605 Third Avenue, New York, NY 10016.)

THE UNITED STATES PHARMACOPOEIAL CONVENTION, INC.

The United States Pharmacopeia (USP) and the National Formulary (NF)

(Application for copies should be addressed to the U.S. Pharmacopoeial Convention, 12601 Twinbrook Parkway, Rockville, MD 20852.)

NATIONAL ACADEMY OF SCIENCE

Food Chemicals Codex

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

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Associations, Inc., Traffic Department, 2200 Mill Road, Alexandria, VA 22314.)

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Suite 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

(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. Nothing in this document, however, shall supersede applicable laws

and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Bid sample approval. Unless otherwise specified (see 6.1), twelve duplicate individual samples of 42.5 gram envelopes that the contractor proposes to furnish, packaged in accordance with the document requirements, shall be submitted to the contracting officer who will forward them to the U.S. Army Natick, Research, Development, and Engineering Center (ATTN: STRNC-WTP), Natick, MA 01760-5018 for bid sample evaluation. Twelve duplicate envelopes of product shall be submitted to the contracting officer, and shall be used as approved reference samples for determining the acceptability of deliveries, as concerns palatability. Bid samples must meet all document requirements prior to being submitted for evaluation of palatability and overall appearance (see 3.4.1). The approval of any bid sample for palatability and overall appearance will not constitute approval of the sample as meeting the other requirements of this document.

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. For type I product only, the following ingredient requirements shall apply.

3.2.1 Cocoa. Cocoa powder shall be prepared from nibs of domestically roasted, mature, well fermented, sound and wholesome cocoa beans, which have been properly dried, cured, and mildly alkalized in accordance with the definitions and standards of the Food and Drug Administration. The pH shall be not less than 6.0 nor more than 7.5, and the fat content (cocoa butter) shall be not less than 14 percent. Chemically extracted cocoa, in part or whole, shall not be acceptable. when washed with petroleum ether, not less than 98 percent by weight shall pass through a U.S. Standard No. 200 sieve.

* 3.2.2 Sugar. Sugar shall be white, refined, granulated superfine, extrafine or smaller grind, cane or beet sugar or a combination thereof.

* 3.2.3. Milk, nonfat dry (low heat). Nonfat dry milk shall be U.S. Extra Grade, Low Heat as defined in the U.S. Standards for Grades of Nonfat Dry Milk (spray process). The nonfat dry milk shall be spray dried not more than 60 days prior to the time the finished cocoa beverage powder is filled into the envelope and the envelope sealed.

3.2.4 Salt. Salt shall be noniodized white, refined sodium chloride with or without anticaking agents.

* 3.2.5 Flavoring. Vanilla extract, pure vanilla sugar, vanillin, ethyl vanillin, methyl vanillin or combinations of these may be used.

3.2.6 Vitamins. Vitamin A shall be the dry, water-dispersible vitamin A palmitate, stabilized in gelatin, gums, or other edible materials with or without sugar. One hundred percent of the stabilized vitamin A palmitate shall pass through a U.S. Standard No. 20 sieve, and not less than 90 percent shall pass through a U.S. Standard No. 30 sieve. Ascorbic acid (Vitamin C), thiamine mononitrate, and pyridoxine hydrochloride shall be of U.S. Pharmacopoeia grade, and the particle size shall be such that the vitamins will be uniformly distributed throughout the cocoa beverage powder.

3.2.7 Lecithin. Lecithin shall comply with the Food Chemicals Codex description for lecithin.

3.2.8 Stabilizers. Stabilizers shall be of cold water soluble type.

* 3.2.9 Creamer, nondairy, dry. The dry, nondairy creamer shall contain not less than 30 percent fat and shall be a white to light cream color, free-flowing, uniformly granular powder that is free from foreign materials and free from noticeable scorched particles. The product shall impart a sweet creamy flavor, free from foreign or objectionable flavors and odors (e.g., sour, malty, tallowy, stale, soapy, rancid, or bitter).

* 3.2.10 Whey, dried, reduced lactose. The dried reduced lactose whey shall comply with the Food and Drug Administration's regulations for Direct Food Substances Affirmed as Generally Recognized as Safe. The whey shall be free flowing and not more than 60 days old from time of spray drying to the time the finished cocoa beverage powder is filled into the envelope and the envelope sealed. The whey shall be manufactured in a plant approved by the Dairy Division, AMS, USDA. The whey shall have been pasteurized before spray drying and meet the following requirements of chemical analyses:

Protein (N x 6.38)	Not less than 16.0 percent
Ash	Not more than 18 percent
Moisture	Not more than 5 percent

3.3 Preparation and processing.

3.3.1 Product formulation. The ingredients for type I product shall be uniformly mixed in the following proportions:

<u>Ingredient</u>	<u>Percent by weight</u>
Sugar	Not more than 45 percent
Nondairy creamer	Not less than 35 percent
Nonfat dry milk (solids) <u>1/</u>	Not less than 9.9 percent
Cocoa	Not less than 9.5 percent
Salt	Not more than 0.5 percent
Vitamins	(For class 1 product only - In quantities to comply with 3.4.2)
Flavoring	Sufficient to provide an acceptable flavor in the prepared ready-to-use product.
Lecithin	Not more than 45 percent
Stabilizers	Not more than 45 percent

1/ Whey, dried, reduced lactose meeting the requirements of 3.2.10, may be substituted on a 1 for 1 basis.

3.4 Finished product.

3.4.1 Palatability. The finished product shall be equal to or better than the approved bid sample (see 3.1 and 6.1) in palatability and overall appearance.

3.4.2 Type I product. The cocoa beverage powder shall consist of a well-blended homogeneous mixture of the specified ingredients; free of lumps which do not fall apart under light pressure and free of extraneous material. The moisture content shall not exceed 3.0 percent by weight. Type I product shall have a maximum sedimentation of 1 mL and shall not contain "Floating" agglomerated cocoa particles. (Note: A check for this defect can be made when the sedimentation test is run in an Imhoff cone. The particles appear as brown coalesced agglomerants that may be seen at the top surface of the beverage). Class 1 product shall have the following vitamin content per ounce: Thiamine mononitrate - not less than - 0.56 mg, Pyridoxine hydrochloride - not less than 0.84 mg, Vitamin A palmitate - not less than 1670 I.U., Ascorbic acid - not less than 25 mg. The prepared ready-to-use product shall possess a good cocoa flavor and odor and disperse readily in hot or cold water. The cocoa beverage powder shall be Salmonella negative.

3.4.3 Type II product. The type II product shall be a commercial cocoa beverage powder which disperses readily in hot or cold water and has a characteristic chocolate flavor.

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

3.6 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 specification. The contractor shall assure product compliance prior to submitting the product to the USDA for any inspection.

* 4.2 Inspection and acceptance service. Product acceptability shall be determined by the USDA. The USDA will determine the degree of acceptance service necessary to assure compliance with the requirements of this document. The cost of grading and acceptance services performed by the USDA involving inspection, official documentation, and related services shall be borne by the contractor.

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

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

* 4.3.1.1 Ingredient examination (for type I only). Conformance of ingredients to identity, condition, formulation, and other requirements specified in 3.2 shall be certified by the ingredient supplier or ingredient manufacturer, or compliance be verified by examination of pertinent labels, markings, US 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 recognizable 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.

4.3.1.2 Packaging material certification. Material listed below shall be accepted on the basis of a contractor's certificate of conformance to the indicated requirements.

TABLE I. Packaging material certification

Material requirement	Requirement paragraph	Test procedure
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Ionomer or polyethylene film thickness and polyester film thickness	5.1.1.1	L-P-378, except that a machinist's micrometer may be used provided that its graduations and accuracy conform to the requirements of L-P-378
Aluminum foil thickness	5.1.1.1	QQ-A-1876
Laminated material construction	5.1.1.1	Laboratory
Color of laminated material	5.1.1.1	Visual
Chipboard of intermediate carton	5.1.1.1.1 5.1.1.1.2	Machinist's micrometer or suitable measuring device.
Polyethylene film	5.1.1.1.3	As specified in L-P-378, except that a machinist's micrometer may be used provided that its graduations and accuracy conform to the requirements of L-P-378.

* 4.3.1.3 Unfilled envelope examination (for type I only). The unfilled envelopes shall be examined for the defects listed in table II. The lot size shall be expressed in units of envelopes. The sample unit shall be one envelope. The inspection level shall be S-4 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 0.65 for major defects and 4.0 for minor defects.

TABLE II. Unfilled preformed envelope defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear, hole, or open seal.
102		Not material specified.
103		Seals not produced by heat.
104		Not sealed on three sides.
105		Width of side seals and bottom seal less than 3/16 or more than 1/2 inch.
106		Inside dimension not as specified.
107		Distance between inside edge of tear, nick, or notch and inside edge of seal less than 1/8 inch.
108		Exterior color of envelope not as specified.
109		Envelope has foreign odor.

110	Not clean.
110	Individual envelopes that stick together and that tear when separated.
201	Tear-nick or notch missing.
202	Tear-nick or notch not located as specified.
203	Depth of tear-nick or notch not as specified.

1/ Envelopes made from roll-stock at the processors plant shall be examined for these defects after filling and sealing.

* 4.3.3 Filled and sealed envelope examination (type I and type II envelopes). The filled and sealed envelopes shall be examined for the defects listed in table III. The lot size shall be expressed in units of envelopes. The sample unit shall be one filled and sealed envelope. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.065 for major defects, and 2.5 for minor defects.

TABLE III. Filled and sealed envelope defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
<u>Applicable to type I product</u>		
101		Tear, hole, open seal, or sifter. <u>2/</u>
102		Closure seal not produced by heat.
103		Closure seal width not as specified. (see 5.1.1.1)
104		Closure seal location not as specified.
105		Not clean. <u>4/</u>
106		Nomenclature or directions for use are missing, incorrect, illegible, or of the kind that smudge, rub, or flake off.
107		Evidence of delamination or seal separation more than 1/16 inch. <u>3/</u>
	201	Supplier's name and address missing, incorrect, or illegible.
108		Excess air not removed from envelope.
<u>Applicable to type II product</u>		
109		Not closed in such a manner to prevent spillage or seepage

1/ Evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ A sifter is an envelope that loses any amount of product when shaken vigorously.

3/ Delamination shall be scored as a defect except delamination of outer ply when

located in the seal area 1/16 inch or further from food product edge of seal. Bags exhibiting this type of delamination shall be tested by manually flexing the delaminated area 10 times. The area of delamination shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delamination area shall then be rapidly flexed by rotating both hands in alternating clockwise-counterclockwise directions. Care shall be exercised when flexing delaminated area near the tear notches to avoid tearing the bag material. After flexing, the separated outer ply shall be grasped between the thumb and forefinger and gently lifted toward the food product edge of the seal. If the separated area is too small to be held between the thumb and forefinger, a number two stylus shall be inserted into the delaminated area and gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to less than 1/16 inch from the product edge of the seal with no discernible resistance to the gentle lifting, the bag shall be rejected.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (i.e. glass, metal, fillings, etc.), or generally detracts from the clean appearance of the package. The following examples shall not be scored as defects for unclean:

- a. Foreign matter which presents no health hazard or potential pouch damage and which can be readily removed by gently shaking the package or by gently brushing the package with a clean, dry cloth.
- b. Dried product which affects less than 1/8 of the total surface area of one pouch face (localized and aggregate).
- c. Water spots.

4.3.4 Net weight examination. The net weight of the filled and sealed primary containers (envelopes or bags) shall be determined by weighing each sample unit on a suitably tared scale. The primary containers shall be examined for defects listed in table IV. The lot size shall be expressed in units of primary containers. The sample unit shall be one filled and sealed primary container. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 2.5 for minor defects.

TABLE IV. Net weight defects 1/

Category	Defect
<u>Minor</u>	
201	Net weight of an individual envelope of type I product less than 40.4 grams. 2/
202	Net weight of an envelope of type II product less than 26.9 grams. 2/
203	Net weight of bag more than 2.0 percent under specified net weight. 3/

1/ The lot shall be rejected if the sample data indicate a lot average net weight less than the required net weight.

2/ Report to the nearest 0.1 gram.

3/ Report to the nearest 0.1 percent.

4.3.5 Product inspection. The end item shall be examined for defects listed in table V. The lot size shall be expressed in primary containers (envelopes or bags). The sample unit shall be the contents of one filled and sealed primary

container. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 1.0 for major defects.

TABLE V. Product defects 1/ 2/

Category	Defect
Major	<u>Dry product (type I)</u>
101	Not a homogenous mixture.
102	Not free of lumps that cannot be broken apart by light finger pressure.
	<u>Prepared product</u> <u>3/</u>
103	Does not disperse readily in hot or cold water.

1/ The presence of foreign material (e.g. glass, dirt, insect, insect parts, hair, wood, 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 bid sample in palatability and overall appearance shall be cause for rejection of the lot (see 3.4.1).

3/ Prepare beverage in accordance with instructions on primary container. Use a sufficient amount of product to prepare 6 ounces of beverage.

* 4.3.6 Product testing (type I only). The type I finished product shall be tested for the characteristics specified in table VI. The sample shall be a 2-pound composite derived from the number of envelopes necessary to yield 2 pounds of product. Any test failure shall be cause for rejection of the lot.

TABLE VI. Product tests

Characteristic	Requirement paragraph	Test method
Moisture	3.4.2	<u>1/</u>
Sedimentation	3.4.2	<u>2/</u>
Vitamin content (class 1 only)	3.4.2	<u>3/</u>

1/ The moisture content shall be determined with the Vacuum Drying method in the Official Methods of Analysis of the AOAC, Chapter: Sugars and Sugar Products, Section: Sugars and Sirups. The results shall be reported to the nearest 0.1 percent.

2/ The sedimentation shall be determined by adding 42.5 grams of the product to 240 mL of hot water (180°F) in a 650-mL beaker and stirring thoroughly for 30 to 45 seconds with a magnetic stirrer or equivalent apparatus until the product is well mixed. The contents shall be poured into a 1-liter Imhoff cone and allowed to stand for 5 minutes. The volume of the sediment (insoluble solids) near the bottom of the cone shall be measured and reported to the nearest 0.1 mL.

3/ The vitamins shall be determined by the applicable method described in Methods of Vitamin Assay of the Association of Vitamin chemists, Inc., 3rd Edition: Ascorbic Acid - Leoffler and Ponting method; Thiamine mononitrate - Thiochrome

method; Vitamin A; and Pyridoxine. Vitamins shall be reported to the nearest standard of measurement as prescribed in test method.

4.3.6.1 Microbiological testing. The finished product shall be tested for Salmonella. Five filled and sealed pouches shall be selected at random from the lot regardless of lot size. The pouched product shall be individually tested for Salmonella in accordance with the Official Methods of Analysis of the AOAC International, method 986.35, 996.08, and 2000.06 D (c). Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the microbiological requirements shall be cause for rejection of the lot.

NOTE: The following conditions apply for salmonella and microbiological testing:

- (1) For prepackaged product received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis that the product represented is Salmonella Negative and meets all microbiological requirements.
- (2) For bulk product received, the contractor is responsible for providing a certificate of analysis stating that the bulk product is Salmonella negative and meets all microbiological requirements. USDA salmonella and additional microbiological testing is required for each end item lot and shall be the basis for lot acceptance with respect to Salmonella and other microbiological testing requirements."

4.3.7 Envelope leakage, delamination, and seal separation testing (type I). The filled and sealed envelopes shall be tested by placing them in a dry desiccator, or similar apparatus, and subjecting them to a vacuum of 26 inches of mercury (atmospheric pressure is 29.9 inches of mercury) for 30 seconds. Any envelope that does not swell to a tightly distended form having at least one distorted edge while under the vacuum shall be counted as a major defect. After leakage testing, the envelopes shall be visually inspected for evidence of delamination and for seal separation. Any delamination or seal separation of more than 1/16 inch from the product edge of any seal shall be counted as a major defect. The lot size shall be expressed in units of envelopes. The sample unit shall be one filled and sealed envelope. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65.

4.3.8 Examination for excess air in envelope. The contents of one filled and sealed envelope shall be evenly distributed in the envelope and a straight edge ruler shall be placed across one face of the envelope at its highest point. The measurement of thickness shall be taken at two points (one on each side) and the two measurements shall be averaged. An average thickness exceeding 7/16 inch shall be counted as a major defect. The sample unit shall be one envelope. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 1.5.

* 4.3.9 Shipping container examination. When shipping containers are required to be in accordance with PPP-B-636, examination for defects in construction, closure, and reinforcement shall be in accordance with the appendix of PPP-B-636. In addition, the following defects shall be classified as follows:

Major: National stock number, item description, contract number or date of pack markings missing, incorrect, or illegible.
 Protective pad and tape, when required, missing, not as specified, or not completely covering metal stitches.
 Reinforcement with nonmetallic strapping or tape is not used.

Interior packing with fiberboard pads not as specified.
 Net weight per shipping container exceeding 40 pounds for shipment to M
 ration assembler.

Minor: Other required marking missing, incorrect, or illegible.
 Shipping container not snug-fitting (applicable to Meal Module
 Shipments).
 Net weight of shipping container exceeds 25 pounds (Applicable to Meal
 Module shipments).

Level C shipping container (see 5.2.3) shall be examined for the marking defects
 theretofor specified.

4.3.10 Intermediate carton or bag examination. The intermediate paperboard
 carton or bag shall be examined for defects listed in table VII. The lot size
 shall be expressed in cartons or bags. The sample unit shall be one filled and
 sealed intermediate paperboard carton or bag. The inspection level shall be S-3
 and the AQL, expressed in defects per hundred units, shall be 6.5 for minor
 defects.

TABLE VII. Intermediate carton or bag defects

Category	Defect
<u>Minor</u>	
201	Slack fill. <u>1/</u>
202	Bulged carton. <u>2/</u>
203	Not closed as specified. <u>1/</u>
204	Required labeling or marking missing, incorrect, or illegible
205	Carton insecurely closed or damaged.
206	Number of envelopes less than required. <u>2/</u> <u>Applicable to intermediate bag</u>
207	Bag not close fitting.
208	Bag not closed as specified.
209	Number of primary bags (individual unit bags) in intermediate bag less than required.

1/ Applicable to cartons of type I product only.

2/ the lot shall be rejected if sample date indicates a lot average count less
 than the required amount.

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

5. PACKAGING

5.1 Preservation. Preservation shall be in accordance with level A, B, or C,
 as specified (see 6.1).

5.1.1 Level A. The product shall be unit packed in accordance with 5.1.1.1.

* 5.1.1.1.1 Envelopes. A net weight of 17 grams or 42.5 grams of type I product shall be filled into heat-sealable envelopes having maximum inside dimensions of 3-7/8 by 5-1/4 inches (envelopes with smaller inside dimensions may be used provided the thickness of the filled and sealed envelopes does not exceed 7/16 inch when examined in accordance with 4.3.8). a minus 2.1 gram tolerance will be allowed in any one envelope, provided the average net weight of the envelopes, inspected in accordance with table IV, is not less than 42.5 grams. Care shall be taken to expel all excess air by hand, by evacuation, or by gentle mechanical (roller) technique, prior to sealing the envelope. Envelopes shall comply with the requirements hereinafter specified. All seams including folded edge when envelope is made from a single piece of folded material and the closure seal shall be made by heat sealing. Side and bottom seals shall be 3/8 (+ 1/8, - 3/16) inch wide. The closure seal shall be not less than 1/4 or more than 3/4 inch wide. If a thermal impulse sealer is used or combination of heated curved bar with thermal impulse, any seal width from 1/8 to 7/16 inch will be acceptable. the closure seal shall not extend more than 3/4 inch below the top edge of the envelope. Tears, nicks or notches at least 1/32 inch deep shall be provided on one or both side seals, and shall be 1 + 1/8 inch from the open edge of the envelope. The distance between the inside edge of the tear, nick or notch and the inside edge of the heat seal shall be at least 1/8 inch. The envelope material from inside to outside shall consist of 0.002 inch thick ionomer or polyethylene film laminated or extrusion coated to 0.00035 inch thick aluminum foil, laminated on the plain side to 0.0005 inch polyester. The polyester shall be bonded to the aluminum foil by hot extruding 10 pounds per ream of polyethylene between the laminate. The exterior surface of the polyester material shall be colored overall with a color in the number range of 34079 and 34087 inclusive, or 24052 through 24087 inclusive of FED-STD-595. Alternatively, the exterior of the polyester material may be color 10045 or have a color in the range of 30045 to 30118, except color 30109 is not permitted. When procured as a component of the Ration, cold Weather, the color shall be in the range of 37778 to 37886. The material shall show no evidence of delamination (see table III) when made into bags or when closed by heat sealing. The envelope shall not leak when tested in accordance with 4.3.7 and shall not exceed 7/16 inch in thickness when examined in accordance with 4.3.8.

5.1.1.1.1.1 Intermediate carton for Meal Ready to Eat. When specified (see 6.1), twenty-five 42.5 gram envelopes of type I product shall be packed in a snug-fitting intermediate folding paperboard box in accordance with style V of PPP-B-566. The carton shall be made of group I or II paperboard except that chipboard or newlined chipboard shall not be used. The paperboard shall have a minimum thickness of 0.032 inch. The cover flap of the carton shall be tuck locked. The dimensions of the carton shall be such as to provide a snug fit for the product without bulging or slack filling.

5.1.1.1.1.2 Intermediate carton for Tray Pack Meal Module. When specified (see 6.1), eighteen 42.5 gram envelopes of type I product shall be packed in an intermediate paperboard box conforming to style XI or XIA of PPP-B-566. The box shall be made with a minimum 0.022 inch thick chipboard or chipboard-kraft combination. The cover shall be provided with tuck locks. The box dimensions shall be 6-5/8 inches in length, 4-7/8 inches in width, and 4 inches in depth.

5.1.1.1.1.3 Intermediate bag for Tray Pack Meal Module 18-Soldier. When specified (see 6.1), nine 1.5 ounce envelopes of cocoa beverage, preserved as specified in 5.1.1.1, shall be packed in a close fitting bag made from clear, food grade polyethylene film having a minimum thickness of 0.003 inches. Closure shall be by folding the open end down over the body of the bag and taping.

5.1.2 Level B. The product shall be unit packed in accordance with 5.1.2.1, or 5.1.2.2 as specified (see 6.1).

5.1.2.1 One-ounce envelopes. A net weight of 28.4 grams of type II cocoa beverage powder shall be filled into a foil-laminated envelope of the type commercially used for the product. A minus 1.5-gram tolerance will be allowed in any one envelope, provided the average net weight of the envelopes, inspected in accordance with table IV, is not less than 28.4 grams. The envelope shall be completely closed in such a manner to prevent spillage or seepage of the product.

5.1.2.1.1 Intermediate cartons. Type II products shall be packed in intermediate cartons. The number of envelopes per carton and the characteristics of the carton shall be the same as is commercially used by the contractor.

5.1.2.2 Two pound bag. Two pounds of type II cocoa beverage powder shall be unit packed in a foil-laminated bag of the type commercially used for the product.

No bag shall have a net weight of less than 2 percent the specified net weight and average net weight of the bags when examined in accordance with table IV shall be not less than 2 pounds. The bag shall be completely closed to prevent spillage of seepage of the product.

5.1.3 Level C. The product, of the type and quantities specified (see 6.1), shall be unit packed in envelopes or bags to provide protection against deterioration during shipment from the supply source to the first receiving activity.

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

* 5.2.1 Level A packing. The product shall be packed in accordance with 5.2.1.1, 5.2.1.2, or 5.2.1.2.1, as applicable. Each shipping container shall be constructed, closed, and reinforced in accordance with type RSC, grade V2s of PPP-B-636. Each shipping container shall be reinforced with nonmetallic strapping or pressure-sensitive adhesive filament reinforced tape in accordance with the appendix of PPP-B-636. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class specified (see 6.1). Strapping of unit loads shall be limited to nonmetallic strapping, except for type II, class F loads.

5.2.1.1 Type I product. Twelve intermediate cartons of the type I product, preserved as specified in 5.1.1.1, shall be enclosed in a waterproof case liner, fabricated and sealed in accordance with MIL-L-10547 for subsistence items. The cartons enclosed in the waterproof case liner, shall be overpacked in a snug-fitting fiberboard shipping container. When the bottom flaps of the shipping container are closed by stitching, the case liner shall be protected from the stitches by placing a paperboard pad between the stitches and the case liner. The case liner shall be protected from stitches in the manufacturers joint by placing a strip of pressure-sensitive tape over the stitching.

* 5.2.1.2 Type II product. Intermediate cartons of type II envelopes, preserved as specified in 5.1.2.1, shall be packed in a snug-fitting fiberboard shipping container. Not more than 600 envelopes per shipping container shall be packed in accordance with 5.2.1.1.

5.2.1.2.1 Two-pound bags. Twelve two-pound bags of type II product shall be packed in a domestic shipping container. Not more than two domestic containers shall be enclosed in a case liner and overpacked in a shipping container in accordance with 5.2.1.1. The case liner shall be protected from stitches as specified in 5.2.1.1.

5.2.2 Level B packing. Envelopes or bags of the product, as applicable in the number and arrangement specified in 5.2.1, shall be packed in a snug-fitting shipping container, constructed, closed and reinforced in accordance with the style RSC, grade V3c, V3s or V4s of PPP-B-636. The shipping container for

envelopes and bags shall be provided with a waterproof case line as specified in 5.2.1.1. The case liner shall be protected from stitches as specified in 5.2.1.1.

Each shipping container shall be reinforced with nonmetallic strapping or pressure-sensitive adhesive filament reinforced tape in accordance with the appendix of PPP-B-636, except that two reinforcing bands may be used, one lengthwise and one girthwise.

5.2.3 Level C packing. Envelopes or bags, as applicable, in the number and arrangement specified, shall be packed in shipping containers complying with the National Motor Freight Classification or Uniform Freight Classification, as applicable, except the closure of the boxes shall be in accordance with method II as specified in the appendix of PPP-B-636.

5.2.3.1 For shipment to ration assembler. Not more than 40 pounds of 42.5 gram envelopes of type I product, unit packed as specified in 5.1.1.1, shall be packed in a manner to ensure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. the shipping container shall be in accordance with the National Motor Freight Classification or Uniform Freight Classification, as applicable, except fiberboard containers shall be closed in accordance with method II, as specified in the appendix of PPP-B-636. the shipping container shall be fitted with top and bottom pads, and a divider made from the same material as the container. The divider shall consist of one piece of fiberboard, scored in four locations to make three equal cells. the terminal ends of the divider shall contact the container wall in the length dimension. The center cell will be formed by bending the fiberboard at right angles so that the opposite wall is contacted by the divider for a length equal to the terminal end of the divider. When metal fasteners are used in the manufacturers joint or setup of the fiberboard box, the fasteners on the inside of the box shall be covered with the tape or paperboard to protect the envelopes from damage.

5.2.3.2 For shipment to ration assembler for Tray Pack Meal Module, 18-Soldier. No more than 30 pounds of product, packaged as specified in 5.1.1.1, shall be packed in a snug-fitting fiberboard box constructed and closed in accordance with style RSC, type CF, class domestic, grade 275 of PPP-B-636. When metal fasteners are used in the box construction, the fasteners on the inside of the box shall be covered with tape or paperboard.

* 5.3 Unit loads. When specified (see 6.1), the product, packed as specified in 5.2.2 and 5.2.3, shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified. When unit loads are strapped, the strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.4 Labeling and marking.

5.4.1 Type I product. Product shall be labeled and marked plainly in black, boldface type, with the information specified in 5.4.1.1 and 5.4.1.2, as applicable. the printing shall not rub or flake off.

5.4.1.1 Envelopes. The envelopes shall be labeled as follows:

COCOA BEVERAGE POWDER

TYPE I

Fortified

1-1/2 oz. 42.5 grams net weight

Supplier's name and address

Mix contents with 6 fluid ounces (1/4 canteen cup) water

For hot cocoa, add contents to hot water and stir until

dissolved

For cold cocoa, mix contents with about 1 fluid ounce of water to make a smooth paste and then add remainder of cold water and stir until blended.

5.4.1.2 Intermediate cartons. Intermediate cartons shall be marked as follows:

COCOA BEVERAGE POWDER
Type I, Fortified
18 or 25 (1-1/2 oz. envelopes)

5.4.2 Type II product. Envelopes, intermediate cartons, or bags shall be labeled and marked in accordance with the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

5.4.3 Shipping containers. Shipping containers shall be marked in accordance with MIL-STD-129.

5.4.4 Marking of unit loads. Unit loads shall be marked in accordance with MIL-L-35078.

6. NOTES

6.1 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this document.
- b. Type and class of product required (see 1.2).
- c. Level of preservation and packing (see 5.1 and 5.2)
- d. When type I envelopes are required to be placed into intermediate cartons (see 5.1.1.1.1 and 5.1.1.1.2.).
- e. Type and class of unit load required (see 5.2.1 and 5.3).
- f. Quantity of envelopes required (see 5.1.1.1.1 and 5.1.1.1.2).
- g. When nine 1.5 ounces (42g) envelopes are to be packed into intermediate bags (see 5.1.1.1.3).

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

6.4 Subject term (key word) listing.

Beverages
Beverage powder
Cocoa

6.5 Changes from previous issue. The margins of this document are marked with an asterisk (*) to indicate where changes (additions, modification, corrections, deletions) from the previous issue were made. This was done as a convenience only, and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:

Army - GL
Navy - SA

Preparing activity:

Army - GL

Air Force - 50

(Project 8960-0069)

Review activities:

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

Civil Agency Coordinating Activity:

VA - OSS

AMSSB-RCF-FN (Valvano/4259)
2003

14 August

TO: DSCP-HRAC (Lowry/7773)

Subject: ES 03-094; DSCP-SS-03-03266; Document changes; inserting new verification conditions for microbiological and aflatoxin requirements

Date recv'd: 3 Apr 03
Date due: 24 Apr 03
Date extended: OPEN
Date replied: 14 August 03

Refs:

(a) Conference call (Natick/USDA/DSCP/User Services Reps/Vetcom), Feb 10, 2003, subject: Salmonella Testing, discuss issue from JSORF on salmonella testing of commercial vs. military products

(b) Follow up to ES02-189; dated 4 Mar 03, subject: Document changes, PCR-D-002 Dairyshake Powder, Fortified with Calcium and Vitamin D, Packaged in a Flexible Pouch; A-A-20043A Creamer, Nondairy, Dry; PKGQAP for A-A-20336 Coffees, Flavored, Instant, Powdered; MIL-C-3031J Cocoa Beverage Powder, inserting new verification conditions for Salmonella negative requirements

(c) Govt meeting at R&DA May 29 03, subject: Discuss verification for Salmonella, aflatoxin, and microbiology requirements

1. Based on the ref case, DSCP requested that Natick apply the same verification criteria for microbiological testing methods in the subject documents as well. Aerobic plate and standard plate and coliform counts and aflatoxin levels would be covered using this new verification process. The documents affected are as follows:

PKG&QAP for A-A-20043A Creamer, Nondairy, Dry
PKG&QAP for A-A-20336 Coffees, Flavored, Instant, Powdered
MIL-C-3031J Cocoa Beverage Powder
PCR-D-002 Dairyshake Powder, Fortified with Calcium and Vitamin D, Packaged in a Flexible Pouch
PCR-N-002 Nut Raisin Mix
PKG&QAP for A-A-20164B Nuts, Shelled
PKG&QAP for A-A-20328 Peanut Butter and Peanut Spread

2. In ref a and c, the discussion on Salmonella determined:

(a) Services restated the requirement that salmonella negative was a valid requirement; and

(b) Differences exist between product received in packets (and product not

further processed except for overwrapping or placement in accessory or meal bag), and product received in bulk and filled into packets for assembly, and whether a certificate of analysis (COA) is acceptable in lieu of testing.

3. Based on a review of the subject case and ref a and c, it was decided to include MICROBIOLOGICAL VERIFICATION with the salmonella statement. Separate statements will also be added for those items needing AFLATOXIN NEGATIVE VERIFICATION testing. These will be additional verifications added to the documents, which may already include the salmonella version.

4. Natick requests DSCP implement the changes cited below for the subject documents for all current, pending, and future procurements until the documents are formally amended or revised:

(a) In the documents (coffee flavored, cocoa beverage powder, nondairy creamer & dairyshake powder) section where the microbiological testing paragraph is specified, delete the current "salmonella statement" and insert the following statements at the end:

Page 2
ES03-094

"NOTE: The following conditions apply for salmonella and microbiological testing:

- (3) For prepackaged product received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis that the product represented is Salmonella Negative and meets all microbiological requirements.
- (4) For bulk product received, the contractor is responsible for providing a certificate of analysis stating that the bulk product is Salmonella negative and meets all microbiological requirements. USDA salmonella and additional microbiological testing is required for each end item lot and shall be the basis for lot acceptance with respect to Salmonella and other microbiological testing requirements."

(b) In the documents (nuts shelled & nut raisin mix & peanut butter spread) section where the aflatoxin testing paragraph is specified, insert the following statements at the end:

"NOTE: The following conditions apply for aflatoxin testing on nuts shelled:

- (1) For prepackaged product received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis that the aflatoxin in the roasted peanuts (in the case of roasted peanuts end item) represented is not greater than 15 parts per billion (ppb). No additional testing is required.
- (2) For roasted peanuts received in bulk (to be used in roasted peanuts end item), the contractor shall have the bulk shipment sampled and tested by USDA. If (a) the bulk shipment is not more than 2 ppb for aflatoxin as evidenced by a USDA Certificate, (b) the end item lots are manufactured using that bulk product, and (c) both the bulk and end item lots' identities have been preserved, then no further aflatoxin testing is required.
- (3) If roasted peanuts are received in bulk (to be used in roasted peanuts end item), and the conditions in (2) above are not met, each end-item lot must be sampled and tested by USDA. End item lots determined to be not greater than 15 ppb in aflatoxin as

evidenced by a USDA Certificate will be considered acceptable. Bulk roasted peanuts with aflatoxin greater than 15 ppb shall not be used as ingredients."

"NOTE: The following conditions apply for aflatoxin testing on nut raisin mix:

- (1) For prepackaged product received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis that the aflatoxin in the roasted peanuts (in the case of roasted peanuts end item) represented is not greater than 15 parts per billion (ppb). No additional testing is required.
- (2) For roasted peanuts received in bulk (to be used in nut raisin mix end item), the contractor shall have the bulk shipment sampled and tested by USDA. If (a) the bulk shipment is not more than 2 ppb for aflatoxin as evidenced by a USDA Certificate, (b) the end item lots are manufactured using that bulk product, and (c) both the bulk and end item lots' identities have been preserved, then no further aflatoxin testing is required.
- (3) If roasted peanuts are received in bulk (to be used in nut raisin mix end item), and the conditions in (2) above are not met, the bulk roasted peanut product may not be used as an ingredient. Rework or segregation of portions of the bulk lot, and further testing may be considered on a case by case basis."

Page 3
ES03-094

"NOTE: The following conditions apply for aflatoxin testing on peanut butter spread:

- (1) For prepackaged peanut butter received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis that the product represented is not greater than 15 ppb for aflatoxin.
- (2) For bulk peanut butter received, the contractor is responsible for providing a USDA certificate of analysis stating that the bulk product is not greater than 15 ppb in aflatoxin. When end item lots are manufactured using that bulk peanut butter and both the bulk and end item lots' identities have been preserved, then no further aflatoxin testing is required.
- (3) If peanut butter is received in bulk, and the conditions in (2) above are not met, each end-item lot must be sampled and tested by USDA. End item lots determined to be not greater than 15 ppb in aflatoxin as evidenced by a USDA Certificate will be considered acceptable. Bulk peanut butter with aflatoxin greater than 15 ppb shall not be used as an ingredient.

(c) With regard to the MRE components using roasted peanuts, the following note should be included in those applicable DSCP contracts in order that the end item contain the most recent crop of product:

"Note: A USDA certificate of analysis on roasted peanuts from the most recent crop year which have been kept in cold storage (between approximately 40-50 deg. F at low humidity) is acceptable. Contractor must attest to these storage conditions. If storage conditions for roasted peanuts are

not established, a USDA certificate of analysis on roasted peanuts will be considered current if not more than 30 days have elapsed since the date of the analysis."

5. The changes will be made to the Natick prepared documents either in the item document or the PKGQAP supplement, as applicable. For DSCP prepared documents, the following notes apply:

(a) For A-A-20043A Creamer Nondairy Dry and A-A-20336 Cofees Flavored, Instant, the microbiological testing for standard plate and coliform counts is specified in the CID. Normally DSCP would need to make a change to the CID; however, in this case, Natick will insert the salmonella and microbiological verification in the PKGQAP for these items in the methods of inspection section.

(b) For A-A-20164B Nuts, Shelled and A-A-20328 Peanut Butter, the aflatoxin testing is specified in the CID. Normally DSCP would need to make a change to the CID; however, in this case, Natick will insert aflatoxin verification in the PKGQAP for these items in the methods of inspection section.

6. The updated applicable document files are attached with this message.

7 attachments

DONALD A. HAMLIN
Team Leader
Food Engineering Services Team
Combat Feeding Directorate

R Valvano

CF: NSC:

Aylward
Bennett
Friel
Hamlin
Hill
Richards
Sherman

Trottier
Valvano
Arcidiocona

Lowry

CF: DSCP & SVCs:

Anthony
Arthur
Ferrante
Galligan
Kavanagh

Beward
Malason
Miller
Richardson H.
Salerno