

INCH-POUND

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SUPERSEDING
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MILITARY SPECIFICATION
BEVERAGE BASE, POWDER, ORANGE, FORTIFIED
(OPERATIONAL RATION COMPONENT)

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

1. SCOPE

1.1 Scope. This document covers orange powder beverage base, fortified with vitamins and minerals, for use by the Department of Defense as a component of operational rations.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents 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 used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5018, by using the 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.

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SPECIFICATIONS

FEDERAL

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

STANDARDS

FEDERAL

- FED-STD-595 - Colors Used in Government Procurement

MILITARY

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

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

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS), U.S. FOOD AND DRUG ADMINISTRATION (FDA)

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

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

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.1).

AMERICAN ASSOCIATION OF CEREAL CHEMISTS (AACC)

Approved Methods of the American Association of Cereal Chemists

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(Application for copies should be addressed to the American Association of Cereal Chemists, 3340 Pilot Knob Road, St. Paul, MN 55121.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 1238 - Flow Rates of Thermoplastic by Extrusion Plastometer
- D 1505 - Density of Plastics by Density Gradient Technique

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

AOAC INTERNATIONAL

Official Methods of Analysis of the AOAC

(Application for copies should be addressed to the AOAC International, 2200 Wilson Boulevard, Suite 400, 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.)

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 1120, 222 South Riverside Plaza, Chicago, IL 60606.)

(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.

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

3.2.1 Sugar, white, granulated, extra fine. Sugar shall be white, granulated, extra fine cane or beet sugar, or a combination thereof. Not more than 20 percent shall be retained on a U.S. Standard No. 20 sieve and not more than 8 percent shall pass through a U.S. Standard No. 100 sieve.

3.2.2 Citric acid, anhydrous, fine powder. Citric acid shall be an anhydrous, fine powder and shall comply with the Food Chemicals Codex. Not more than 3 percent shall be retained on a U.S. Standard No. 30 sieve and not more than 5 percent shall pass through a U.S. Standard No. 100 sieve.

3.2.3 Dextrose hydrate, powder. Dextrose hydrate shall be a powder and shall comply with the Food Chemicals Codex.

3.2.4 Tricalcium phosphate. Tricalcium phosphate shall comply with the Food Chemicals Codex.

3.2.5 Glycerin, food grade. Food grade glycerin shall comply with the Food Chemicals Codex.

3.2.6 Potassium citrate, powder. Potassium citrate shall be a powder and shall comply with the Food Chemicals Codex.

3.2.7 Flavor, orange. Orange flavor shall be a natural flavor or an artificial and natural flavor or a combination thereof and shall conform in every respect to the requirements of the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder. Orange flavor shall have a fragrant and aromatic odor, and a sweet, fruity, characteristic flavor (see 6.3.3).

3.2.8 Vitamin premix. Vitamin premix shall consist of the following active ingredients and amounts per 170 mg (guaranteed): 1/

Ascorbic acid	60.00 mg	<u>2/</u>
Niacinamide	0.50 mg	
Pyridoxine hydrochloride	0.25 mg	
Riboflavin, type S	0.45 mg	
Thiamine mononitrate	0.30 mg	<u>3/</u>
Vitamin E, 50 percent S.D.	4.50 mg	
Vitamin D	<u>4/</u>	
D-calcium pantothenate	2.00 mg	
Sugar	<u>q.s.</u>	
	170.00 mg	

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- 1/ All ingredients in the vitamin premix mix shall be food grade. The sugar shall have a granulation that aids in maintaining a stable mixture.
- 2/ Expressed as 60.0 mg active ascorbate from coated ascorbate; use 86.0 mg of ascorbic acid (70.0 percent) coated with maltodextrin (30.0 percent), or use 62.0 mg of ascorbic acid (97.5 percent) coated with ethyl cellulose (2.5 percent).
- 3/ Expressed as 0.30 mg active thiamine mononitrate; use encapsulated form with 60 percent coating of mono and diglycerides; therefore 0.91 mg of coated form is required.
- 4/ Vitamin D equivalent to 200 IU may be obtained from either crystalline vitamin D2 (5 micrograms of 100 percent purity product) or from vitamin D3 in cold water dispersible beadlets (2 mg of 100,000 IU/g beadlets).

3.2.9 Xanthan gum. Xanthan gum shall comply with the Food Chemicals Codex (see 6.3.1).

3.2.10 Silica. Silica shall comply with the Food Chemicals Codex for silicon dioxide (see 6.3.2).

3.2.11 Cellulose gum. Cellulose gum shall be a powder and shall comply with the Food Chemicals Codex (see 6.3.6).

3.2.12 Titanium dioxide. Titanium dioxide shall be water dispersible and shall comply with the Food Chemicals Codex.

3.2.13 FD&C Yellow No. 5. FD&C Yellow No. 5 shall conform in every respect to the provisions of the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

3.2.14 FD&C Yellow No. 6. FD&C Yellow No. 6 shall conform in every respect to the provisions of the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

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

3.3.1 Preparation of orange powder beverage base. The orange powder beverage base shall be formulated and prepared as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Sugar, white, granulated, extra fine	84.930
Citric acid, anhydrous, fine powder	4.500
Dextrose hydrate, powder	4.700
Tricalcium phosphate	1.850
Glycerin, food grade	1.000

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Potassium citrate, powder	0.820
Flavor, orange <u>1/</u>	0.720
Vitamin premix	0.570
Xanthan gum	0.355
Silica	0.350
Cellulose gum	0.140
Titanium dioxide	0.030
FD&C Yellow No. 5	0.020
FD&C Yellow No. 6	0.015

1/ The percent of the orange flavor ingredient may be adjusted as necessary to meet finished product requirements.

a. Individual ingredients that exhibit caking shall be sieved through a U.S. Standard No. 16 sieve or equivalent mesh screen before blending into the final product.

b. Preblending part of the sugar and glycerin may be required to properly mix the glycerin and develop the light orange color from the coloring agents.

c. All ingredients shall be combined and uniformly blended in a suitable mixer until the product is homogenous.

d. The product shall be handled in such a manner so as to prevent an increase in moisture content (see 3.4).

3.3.2 Pouch filling and sealing. Each pouch shall be filled and sealed with product such as to conform to the finished product requirements and to the requirements specified in 5.1.1.

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

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

c. The color shall be light orange.

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

e. The moisture content of the powder shall not exceed 2.0 percent.

f. One hundred percent of the product shall pass through a U.S. Standard No. 16 sieve.

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- g. No individual pouch shall contain less than 48 grams of product.
- h. The average net weight of the pouches shall be not less than 50 grams.
- i. When prepared in accordance with the specified instructions in 4.5.5, the hydrated product shall possess the flavor, odor and consistency characteristic of an orange flavored drink.

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

3.5 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 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 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.

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

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

4.5.1.1 Ingredient and component examination. Conformance of ingredients and components to identity, condition, and other requirements specified in 3.2 shall be certified by the ingredient supplier or ingredient manufacturer, and compliance shall be verified by examination of pertinent labels, markings, U.S. Grade Certificates, certificates of analyses, or other such valid documents acceptable to the inspection agency. If necessary, each ingredient shall be examined organoleptically or inspected according to generally recognized test methods, such as the methods described in the Official Methods of Analysis of the AOAC and in the Approved Methods of the American Association of Cereal Chemists (AACC), 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.

4.5.1.2 Pouch material certification. Material listed below may be accepted on the basis of a contractor's certificate of conformance to the indicated requirements. In addition, compliance to the requirements for inside pouch dimensions and dimensions of manufacturer's seals may be verified by a certificate of conformance.

<u>Requirement</u>	<u>Requirement paragraph</u>	<u>Test procedure</u>
Thickness of films for laminated material	5.1.1.1	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
Aluminum foil thickness	5.1.1.1	As specified in QQ-A-1876
Laminated material identification and construction	5.1.1.1	Laboratory evaluation
Color of laminated material	5.1.1.1	Visual examination

4.5.2 In-process examination. In-process examination shall be performed to determine conformance to the preparation, processing, filling, sealing,

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and packaging requirements. Any nonconformance revealed by actual examination or by review of records of the formulation, or of other valid documents shall be cause for rejection of the involved product.

4.5.3 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 48 grams shall be classified as a minor defect. Results shall be reported to the nearest 1.0 gram. 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. In addition, the lot shall be rejected if the sample average net weight is less than 50 grams.

4.5.4 Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in table I. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 4.0 for minor defects.

TABLE I. Filled and sealed pouch defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear, cut, hole, or abrasion through one or more layers in the pouch material or leakage through any heat seal 2/
102		Foldover wrinkle extending into the seal such that the defective closure seal is reduced to less than 1/16 inch 3/
103		Evidence of entrapped product that reduces the effective closure seal to less than 1/16 inch 3/
104		Presence of delamination 4/
105		Unclean pouch 5/
106		Labeling is missing, incorrect, or illegible
107		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects 6/
108		Less than 3/16 inch between inside edge of tear notch and inside edge of seal

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TABLE I. Filled and sealed pouch defects 1/ (cont'd)

Category		Defect
<u>Major</u>	<u>Minor</u>	
109		Closure seal width not as specified
110		Closure seal not located as specified
	201	Tear notch(es) or serrations missing or not located as specified
	202	Depth of tear notch(es) or serrations not as specified
	203	Presence of delamination 4/

- 1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.
- 2/ Pinholes or breaks inherent to the manufacturing process of the aluminum foil shall not be scored as a defect.
- 3/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed pouch.
- 4/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the pouch after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise-counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the delaminated area is a defect, use the following

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procedure. Mark the outside edges of the delaminated area using a bold, permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch (\pm 1/16 inch) from the delaminated area. The pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

- 5/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (for example, glass, metal filings) 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.
- 6/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

4.5.5 Product examination. The finished product shall be examined for the defects listed in table II. The lot size shall be expressed in pouches. The sample unit shall be the contents of one filled and sealed pouch. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 1.5 for major defects.

TABLE II. Product defects 1/ 2/

Category	Defect
<u>Major</u>	
151	Not light orange color
152	Product retained on a U.S. Standard No. 16 sieve 3/

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TABLE II. Product defects 1/ 2/ (cont'd)

Category	Defect
<u>Major</u>	
153	Hydrated product does not possess flavor, odor, and consistency characteristic of an orange flavored drink 4/

- 1/ The presence of any foreign material (for example, glass, dirt, insect parts, hair, wood, metal), foreign odor or flavor (for example, burnt, scorched, moldy, rancid, sour, stale), or foreign color shall be cause for rejection of the lot.
- 2/ Product not equal to or better than the approved preproduction sample in palatability or overall appearance shall be cause for rejection of the lot (see 3.4.1).
- 3/ The contents of one pouch shall be poured onto a U.S. Standard No. 16 sieve and vigorously shaken.
- 4/ The hydrated product shall be prepared by adding 12 ounces of water to the contents of one pouch while stirring.

4.5.6 Pouch leakage and seal separation testing. The filled and sealed pouches 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 pouch 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 pouches shall be visually inspected for evidence of seal separation. Any 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 pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65.

4.5.7 Moisture content testing. Eight filled and sealed pouches shall be selected at random from the lot regardless of the lot size. The contents of the pouches shall be individually tested for moisture content in accordance with the Official Methods of Analysis of the AOAC, method 925.45. The test results shall be reported to the nearest 0.1 percent. Any result not conforming to the requirement in 3.4 shall be classified as a major defect and shall be cause for rejection of the lot.

4.5.8 Shipping container examination. Shipping containers shall be examined for defects in assembly, closure, and reinforcement (when

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applicable) in accordance with PPP-B-636. In addition, the following defects shall be classified as follows:

Major: Marking missing, incorrect, or illegible

Minor: More than 40 pounds packed in box

5. PACKAGING

5.1 Preservation. Preservation shall be level A.

5.1.1 Level A. The product shall be unit packed in pouches as specified (see 6.1).

5.1.1.1 Pouch material. The pouch shall be fabricated from a multiple ply, flexible laminate, barrier material consisting of an outer ply of 50 gauge polyester bonded to an intermediate ply of 0.00035 inch thick aluminum foil with 10 pounds per ream pigmented polyethylene, and bonding the opposite side of the aluminum foil to 0.002 inch thick (inner ply) ionomer or polyethylene film. All tolerances for thickness of pouch materials shall be plus or minus 20 percent. For Long Range Patrol (LRP) applications, the complete exterior surface of the pouch shall be uniformly colored in the range of green 34079 through 34087 or 24052 through 24087 or brown 30045 through 30118 (excluding 30109) or 10045 of FED-STD-595. For Ration, Cold Weather (RCW) applications, the complete exterior surface of the pouch shall be colored white overall with a color in the range of 37778 through 37886 of FED-STD-595.

5.1.1.2 Pouch construction. The pouch shall be a flat style pouch having inside dimensions of 3-7/8 inches ($\pm 1/8$ inch) by 4-3/4 inches ($\pm 1/8$ inch). The first dimension specified shall be the opening of the pouch between the heat sealed sides. The empty pouch shall be made by heat sealing three edges with 3/8 inch ($\pm 1/8$ inch) wide seals. A "V", "C", or block "U" tear notch at least 1/32 inch deep, located 1 to 1-1/4 inch from the top edge of the pouch, shall be made in one or both side seals. The distance between the inside edge of the tear notch and the inside edge of the seal shall be at least 3/16 inch. A tear nick may be used in lieu of a tear notch. One side of the open end of the pouch may be provided with an extended or foldover lip, extended not more than 5/16 inch to facilitate opening and filling. Tear notch location shall be measured from the top of the pouch, excluding the extended or foldover lip. Alternatively, if the pouch has serrated edges, the serrations may be used as tear notches, provided that the serrations are sharp (no plastic tailings exist) and the serrations depth and the minimum seal width at the serrated edges are in accordance with the above requirements. The pouch shall be constructed with square or rounded corners at all four corners (radius approximately 3/8 inch).

5.1.1.3 Pouch filling and sealing. A net weight of 50 grams of orange powder beverage base shall be filled into a pouch, in such a manner as to avoid contaminating the heat seal area. The filled pouch shall be sealed

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with a 3/8 inch (+ 1/8 inch) heat seal. If a thermal impulse closure seal is used, any seal width of 1/8 inch to 7/16 inch will be acceptable. The closure seal shall not extend below the tear notch on either side of the pouch. The closure seal shall be free of fold over wrinkles which reduce the effective closure seal to less than 1/16 inch.

5.2 Packing. Packing shall be level C.

5.2.1 Level C packing. Not more than 40 pounds of product, unit packed as specified in 5.1.1, 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. When metal fasteners are used in the manufacturer's joint or setup of the fiberboard box, the fasteners on the inside of the box shall be covered with tape or paperboard to protect the pouches from mechanical damage.

5.3 Labeling and marking. Nutrition labeling shall be in accordance with the provisions of 21 CFR Part 101.9, Nutrition labeling of food.

5.3.1 Unit pack. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch, with permanent black ink which is free of carcinogenic elements or ingredients. The information shall be located on the body of the pouch not closer than 1/16 inch to any seal. If a non-contact type printer is used, the information may be located anywhere on the pouch (in one complete print), except the closure seal area. The label shall contain the following information:

BEVERAGE BASE, POWDER, ORANGE, FORTIFIED
(letters not less than 7/32 inch high)
ADD CONTENTS TO APPROXIMATELY 1/2 CANTEEN CUP
(12 OUNCES) OF WATER AND STIR
(letters not less than 1/8 inch high)

Date 1/
(letters not less than 1/8 inch high)
Net weight
(letters not less than 1/8 inch high)
Contractor's name and address
(letters not less than 1/8 inch high)

1/ Each pouch shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, March 19, 1991 would read 1079. The Julian day code shall represent the date the product is unit packed into the pouch.

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

6. NOTES

6.1 Acquisition requirements. Acquisition documents should 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 3.4.1 and 6.2).
- e. Ration, Cold Weather component or Long Range Patrol component.

6.2 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of Federal Acquisition Regulation (FAR) 52.209-4. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and number of units to be furnished. The contracting officer also should include specific instructions in all acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.3 Ingredient information.

6.3.1 Xanthan gum. It has been found that Keltrol F. manufactured by Kelco Division of Merck & Co., Inc. meets the requirements of 3.2.9 and performs satisfactorily in this product.

6.3.2 Silica. It has been found that Syloid 244 manufactured by Grace Davison, W.R. Grace and Company, meets the requirements of 3.2.10 and performs satisfactorily in this product.

6.3.3 Flavor, orange. It has been found that the following combination of orange flavors meets the requirements of 3.2.7 and performs satisfactorily in this product:

Natural Orange Flavor WONF #92251 manufactured by Tastemaker, at 0.4 percent of the formulation weight;
 Natural and Artificial Orange Flavor #22448 manufactured by Tastemaker, at 0.3 percent of the formulation weight;
 Orange Oil Flavor (A Natural and Artificial Flavor) #F31129 manufactured by McCormick Flavor Division, McCormick and Company at 0.02 percent of the formulation weight.

6.3.6 Cellulose gum. It has been found that CMC 7HXF manufactured by Aqualon Company, Division of Hercules Incorporated, meets the requirements of 3.2.11 and performs satisfactorily in this product.

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6.4 Subject term (key word) listing.

Long Range Patrol
Pouched food
Ration, Cold Weather

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - GL
Navy - SA
Air Force - 50

Preparing activity:

Army - GL
(Project 8960-0080)

Review activities:

Army - MD, QM
Navy - MC
DLA - 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.

1. RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-B-44135B	2. DOCUMENT DATE (YYMMDD) 1993 September 2
3. DOCUMENT TITLE BEVERAGE BASE, POWDER, ORANGE, FORTIFIED (OPERATIONAL RATION COMPONENT)			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME U.S. Army Natick RD&E Center		b. TELEPHONE (Include Area Code) (1) Commercial 508-651-4501 (2) AUTOVON/DSN 256-4501	
c. ADDRESS (Include Zip Code) Commander, U.S. Army Natick RD&E Center ATTN: SATNC-WT Natick, MA 01760-5018		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	