## SECTION C

This document covers enriched hominy grits in a boil-in-bag (BIB) pouch then overpacked in a barrier pouch for use by the Department of Defense as a component of operational rations.

## C-1 ITEM DESCRIPTION

**PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20035D HOMINY GRITS, ENRICHED, PACKAGED IN A BOIL-IN-BAG (BIB) POUCH**

Type, style, flavor.

Type I – White
Style C – Instant
Flavor 1 – Unflavored

## C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of the Packaging Requirements and Quality Assurance Provisions. The approved sample shall serve as the product standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved product standard, which result in a product non comparable to the product standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including product standard comparability.

B. Shelf life. The product, overpacked in a barrier pouch, shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Appearance. The prepared product shall have the appearance of cooked white, instant, unflavored enriched hominy grits. The prepared product shall be free of foreign materials.

D. Net weight. The average net weight shall be not less than 450 grams (15.9 ounces). The net weight of an individual pouch shall be not less than 428 grams (15.1 ounces).

E. Physical granulation requirements. For the product specified, physical granulation requirements shall be in accordance with A-A-20035D.

F. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

G. Analytical requirements. For the product specified, the aflatoxin and moisture content requirements and procedures shall be in accordance with A-A-20035D.

H. Oxygen content. The oxygen content of the headspace gas in the barrier pouch shall not exceed 2.0 percent.

## SECTION D

## D-1 PACKAGING

A. Packaging. Four hundred fifty grams (15.9 oz) of product shall be packaged in a preformed BIB pouch as described below. The pouch shall be used as a pouch for product preparation and may be used as the cooking vessel for the product.

(1) BIB pouch.

a. Pouch material. The preformed pouch shall be fabricated from 0.0020 inch thick LLDPE/EVOH/LLDPE laminated or extrusion coated to 0.0006 inch thick biaxially oriented nylon (BON) which is then bonded with 0.0020 inch thick polyethylene. All tolerances for thickness of pouch material shall be plus or minus 20 percent. Alternative materials shall be acceptable if all performance requirements are met. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product. The material shall be clear or translucent so the water level is visible through the pouch.

b. Pouch construction. The pouch shall be a flat style preformed pouch having inside dimensions of 11-3/4 inches by 15-3/8 inches (± 1/8 inch). The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8, +3/16 inch) wide seals. The seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,B(1)a. A heat seal, minimum 4 inches long, shall be placed in the center of the pouch to create a partial left/right division in the pouch. The pouch shall show no material degradation and shall not damage the product when the prepared product in the BIB pouch is placed in boiling water for 2 hours when tested in accordance with E-6,B(3).

c. Fitment and cap. The plastic threaded fitment and cap shall have a minimum opening of 1-1/2 inch. The cap shall thread onto the neck to provide a liquid barrier.

d. Venting. The pouch shall be fitted with a one-way air venting system which allows air to escape and does not allow water to enter the pouch.

NOTE: BIB pouch shall be submitted to the Contracting Officer for review and approval and to the US Army Research, Development and Engineering Command Natick Soldier Research, Development and Engineering Center (RDNS-CFF) for review of the venting system.

e. Pouch filling and sealing. Product shall be inserted into the pouch and the filled pouch shall be sealed with a minimum 1/8-inch wide heat seal. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,B(1)b.

(2) Barrier pouch. Three BIB pouches and oxygen scavenger(s) shall be placed in a barrier foil pouch having maximum outside dimensions of 18 by 18 inches. The pouch shall be made from a heat sealable barrier material, one layer of which is a minimum of 0.00035 inch thick aluminum foil. All four edges of the pouch shall be heat-sealed with seals not less than 1/8 inch wide. The BIB pouches and oxygen scavengers shall not be entrapped in the heat seals. A tear nick, notch or serrations shall be provided to facilitate opening of the filled and sealed pouch. The side, bottom and closure seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,B(1)a. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance as specified in E-6,B(1)c.

(3) Oxygen scavenger. The oxygen scavenger shall be constructed of materials that are safe for direct and indirect food contact, and shall be suitable for use with edible products. The oxygen scavenger shall be in compliance with all applicable FDA regulations.

(4) Paperboard carton. One barrier pouch shall be packed in a paperboard carton. The carton shall be RSC, tray or telescoping design. The paperboard shall be minimum 0.028 inch thick and shall have a minimum basis weight of 100 pounds per square feet. The paperboard may be coated. The paperboard may be bleached. The use of materials composed of the highest percentage of recovered materials practicable is encouraged. The outside dimensions of the carton shall not exceed 12-1/2 by 11-1/2 by 4-1/2 inches.

**D-2 LABELING**

A. BIB pouch. Each BIB pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color which is free of carcinogenic elements. A carcinogenic-free pre-printed self-adhering clear polyester label printed with indelible contrasting ink may also be used. The label shall contain the following information:

(1) Name of product (letters not less than 1/4 inch high)
(2) Ingredients
(3) Date 1/
(4) Net weight
(5) Contractor's name and address
(6) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA regulations

NOTE: There shall be a black line, minimum 1/16 inch thick, on the pouch, indicating the fill level.

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, 14 February 2010 would be coded as 0045. The Julian day code shall represent the day the product was packaged into the BIB pouch.

The following instructions shall also be on the BIB pouch:

**YIELD:** Serves 18 portions of approximately 1/2 cup each.

**PREPARATION**: Shake pouch to settle contents. Open cap. Support pouch on flat surface. Add about 64 fluid ounces (8 cups) of potable water to fill line. Replace cap. Shake pouch. If level of hominy grits is below fill line, add more water.

**TO HEAT IN WATER:** Submerge unopened pouch in water. Bring water to a boil. Simmer for 45 minutes. Avoid overheating (pouch shows evidence of bulging).

**WARNING**: Do not heat pouch in oven.

**TO TRANSPORT AFTER HEATING**: Insert pouch into an insulated food container or empty cooked hominy grits into an insulated food container to protect during transport.

**CAUTION**: Use care when opening as pressure may have been generated within the pouch.

**TO OPEN**: Cut bottom of pouch with a clean knife.

Note: The font tested by Natick was Microsoft Helvetica. The font used shall be similarly clear/easy to read as Helvetica. The recommended font sizes are as follows: 22 for the product name, 14 for "yield" and "to heat in water." If an additional note is required on the label, such as "fluff before serving," it should also be in font size 14. All other information should be in font size 9.

B. Barrier pouch. Each barrier pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color. The label shall contain the following information:

(1) Name of product (letters not less than 1/4 inch high)
(2) Contents
(3) Date 1/
(4) Contractor's name and address

In addition, the following warning shall be labeled:

DO NOT OPEN WITH KNIFE.
USE IMMEDIATELY. DO NOT STORE BOIL-IN-BAG POUCHES.

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, 14

February 2010 would be coded as 0045. The Julian day code shall represent the day the product was packaged into the BIB pouch.

C. Paperboard carton. Each carton shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color. The label shall contain the following information:

(1) Name of product (letters not less than 1/4 inch high)
(2) Contents
(3) Date 1/
(4) Contractor's name and address

1/ Each carton 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, 14 February 2010 would be coded as 0045. The Julian day code shall represent the day the product was packaged into the BIB pouch.

The product shall be formulated and labeled in accordance with all USDA labeling regulations and policies. The paperboard carton shall be labeled with the following product name.

HOMINY GRITS, ENRICHED, WHITE, INSTANT, UNFLAVORED

## D-3 PACKING

A. Packing. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC-L of ASTM D 5118/D 5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, grade 200 of ASTM D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

## D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

## D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DSCP FORM 3556 Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence.

## SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQ Z1.4, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQ Z1.4 will be utilized. When required, the manufacturer shall provide the Certificate(s) of Conformance to the appropriate inspection activity. Certificate(s) of Conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e. the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command
Natick Soldier Research, Development and Engineering Center
RDNS-CFF
15 Kansas Street
Natick, MA 01760-5056

One lot shall be randomly selected during each calendar month of production. Two (2) sample units of each item produced shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the product examination and the methods of inspection cited in this section.

## E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The product shall be examined for compliance with the performance requirements specified in A-A-20035D and Section C of the Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in BIB pouches. The sample unit shall be the contents of one BIB pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I.

TABLE I. Product defects 1/ 2/ 3/

| Category | | Defect |
|---|---|---|
| Major | Minor | |
| 101 | | Product not type, style, flavor specified. |
| | 201 | Product not white, instant, unflavored enriched hominy grits appearance. |
| | | Prepared product 4/ |
| 102 | | Product does not have a cooked white, instant, unflavored enriched hominy grits, characteristic corn odor or flavor. |
| | 202 | Product does not have a cooked white, instant, unflavored enriched hominy grits appearance. |
| | 203 | Product does not have a cooked white, instant, unflavored enriched hominy grits texture. |
| | | Net weight |
| | 204 | Net weight of an individual pouch less than 428 grams (15.1 ounces). 5/ |

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, glass, wood, or metal, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, stale, musty or moldy shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot. Palatability not applicable to unpreparedproduct.

3/ Enriched hominy grits shall be verified with the statement of ingredients on the label.

4/ Prepare enriched hominy grits in accordance with BIB instructions.

5/ Sample average net weight less than 450 grams (15.9 ounces) shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Shelf life. The contractor shall provide a Certificate of Conformance that the product has a 36 month shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point quality scale to be considered acceptable.

(2) Net weight. The net weight of the filled and sealed pouch shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 1 gram or 0.1 ounce.

(3) Physical granulation requirements. Conformance to the physical granulation requirements shall be determined by a Certificate of Conformance (CoC).

(4) Analytical requirements. Conformance to the aflatoxin and moisture content requirements and procedures shall be determined by a CoC.

(5) Oxygen content. Eight filled and sealed barrier pouches shall be randomly selected from one lot and individually tested for oxygen content in accordance with any established test method. Testing shall be completed once filled and sealed pouches have equilibrated at room temperature for a minimum of 96 hours from the time of sealing. Test results shall be reported to the nearest 0.10 percent. Government verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be cause for rejection of the lot.

## E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)

A. Packaging.

(1) BIB and barrier pouch material certification. The pouch material shall be tested for these characteristics. A Certification of Conformance (CoC) may be accepted as evidence that the characteristics conform to the specified requirements. In addition, compliance to the requirements for inside pouch dimensions and dimensions of manufacturer's seals may be verified by CoC.

| Characteristic | Requirement Paragraph | Test procedure |
|---|---|---|
| Thickness of films for laminated material | D-1,A(1) and D-1,A(2) | ASTM D 2103 1/ |
| Laminated material identification and construction | D-1,A(1) and D-1,A(2) | Laboratory evaluation. |
| Color of BIB pouch material | D-1,A(1) | Fill the pouch with minimum 8 oz. of water. The water level in the pouch shall be easily discernible through the pouch material. Inability to discern the water level shall constitute a test failure. |

1/ ASTM D 2103 Specification for Polyethylene Film and Sheeting

(2) Unfilled BIB and barrier preformed pouch certification. A CoC may be accepted as evidence that unfilled BIB and barrier pouches conform to the requirements specified in D-1,A(1) and (2). When deemed necessary by the USDA, testing of the unfilled preformed pouches for seal strength shall be as specified in E-6,B(1)a.

(3) Filled and sealed BIB pouch examination. The filled and sealed BIB pouches shall be examined for the defects listed in table II. The lot size shall be expressed in pouches. The sample unit shall be one 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 2.5 for minor defects.

TABLE II. Filled and sealed BIB pouch defects 1/

| Category | | Defect |
|---|---|---|
| Major | Minor | |
| 101 | | Tear or hole or open seal. |
| 102 | | Seal width less than 1/16 inch. 2/ |
| 103 | | Presence of delamination. 3/ |
| 104 | | Unclean pouch. 4/ |
| 105 | | Pouch has foreign odor. |
| 106 | | Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/ |
| | 201 | Label missing or incorrect or illegible. |
| | 202 | Seal width less than 1/8 inch but greater than or equal to 1/16 inch. |
| | 203 | Presence of delamination. 3/ |
| | 204 | Center heat seal not provided. |
| 107 | | Venting system missing or not functional. |
| 108 | | Fitment and cap missing or does not fit or does not provide a liquid barrier. |
| | 205 | Fill line missing or incorrect. |
| | 206 | When self-adhering label is used, label not adhered to pouch (for example, label raised or peeled back or presence of gaps along perimeter). |

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

2/ 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.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose inner barrier film 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 laminated area is a defect, use the following 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.

4/ 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 pouch. The following examples shall not be classified 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 pouch with a clean dry cloth.

b. Dried product that affects less than 1/8 of the total surface area of one pouch face (localized and aggregate).

5/ 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) Filled and sealed barrier pouch examination. The filled and sealed barrier pouches shall be examined for the defects listed in Table III. The lot size shall be expressed in pouches. The sample unit shall be one 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 2.5 for minor defects.

TABLE III. Filled and sealed barrier pouch defects 1/

| Category | | Defect |
|---|---|---|
| Major | Minor | |
| 101 | | Tear or hole or open seal. |
| 102 | | Seal width less than 1/16 inch. 2/ |
| 103 | | Presence of delamination. 3/ |
| 104 | | Unclean pouch. 4/ |
| 105 | | Pouch has foreign odor. |
| 106 | | Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/ |
| 107 | | Pouch does not contain one intact oxygen scavenger. 6/ |
| | 201 | Label missing or incorrect or illegible. |
| | 202 | Tear nick or notch or serrations missing or does not facilitate opening. |
| | 203 | Seal width less than 1/8 inch but greater than or equal to 1/16 inch. |
| | 204 | Presence of delamination. 3/ |
| 108 | | Not 3 BIB pouches in a barrier pouch. |
| 109 | | BIB pouch or oxygen scavenger entrapped in heat seal of barrier pouch. |

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

2/ 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.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose inner barrier film 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 laminated area is a defect, use the following 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.

4/ 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 pouch. The following examples shall not be classified 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 pouch 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).

5/ 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.

6/ Construction of the oxygen scavenger and compliance with FDA regulations will be verified by CoC.

B. Methods of inspection.

(1) Seal testing. The pouch seals shall be tested for seal strength as required in a, b or c, as applicable.

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed BIB or barrier pouch shall be tested for seal strength in accordance with ASTM F 88, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

b. Pouch closure seal testing. The closure seals of the BIB or barrier pouch shall be tested for seal strength in accordance with ASTM F 88. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

c. Internal pressure test (for barrier pouch). The internal pressure resistance shall be determined by pressurizing the barrier pouches while they are restrained between two rigid plates. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal

tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the side and bottom seals of the pouch. For testing the closure seal, the bottom seal shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four-seal tester shall be equal to the thickness of the product +1/16 inch. Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer's seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table II, footnote 2/) shall be considered a test failure. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

(2) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D 3330/D 3330M, Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape. In lieu of testing, a CoC shall be provided.

(3) BIB in boiling water test. Prepared BIB hominy grits pouches shall be tested for durability in boiling water. The lot size shall be expressed in BIB pouches. The inspection level shall be S-2. The prepared BIB pouches shall be placed in boiling water for two hours. After removal from the boiling water, the pouches shall be inspected. Any delamination or degradation of the BIB pouch or damage to the product shall be classified as a major defect and shall be cause for rejection of the lot.

C. Paperboard carton. The filled and closed paperboard cartons shall be examined for the defects listed in table IV. The lot size shall be expressed in paperboard boxes. The sample unit shall be one carton fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE IV. Paperboard carton and label defects

| Category | | Defect |
|---|---|---|
| Major | Minor | |
| 101 | | Labeling missing or incorrect or illegible. |
| 102 | | Inadequate workmanship. 1/ |
| | 201 | Does not contain one filled and sealed barrier pouch. |

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, inadequate or improper closure, or bulged or distorted container.

D. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table V. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE V. Shipping container and marking defects

| Category | | Defect |
|---|---|---|
| Major | Minor | |
| 101 | | Marking missing or incorrect or illegible. |
| 102 | | Inadequate workmanship. 1/ |
| | 201 | More than 40 pounds of product. |

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

E. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

## SECTION J REFERENCE DOCUMENTS

Unless otherwise specified, the issues of these documents are those active on the date of the solicitation or contract.

DSCP FORMS

| | |
|---|---|
| DSCP FORM 3507 | Loads, Unit: Preparation of Semiperishable Subsistence Items |
| DSCP FORM 3556 | Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence |

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) www.asq.org

| | |
|---|---|
| ANSI/ASQ Z1.4 | Sampling Procedures and Tables for Inspection by Attributes |

ASTM INTERNATIONAL www.astm.org

| | |
|---|---|
| D 1974 | Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes |
| D 2103 | Specification for Polyethylene Film and Sheeting |
| D 3330/ D 330M | Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape |
| D 4727/D 4727M | Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes |
| D 5118/D5118M | Standard Practice for Fabrication of Fiberboard Shipping Boxes |
| F 88 | Standard Test Method for Seal Strength of Flexible Barrier Materials |