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SUPERSEDING
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SECTION C

This document covers hot sauce in a bottle or 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-20097F HOT SAUCE

Types.

Type II – Extra hot 4x
Type VII – Chili and lime
Type IX – Buffalo style

Packages.

Package A – Meal, Cold Weather (MCW)
~~Package B – Food Packet, Long Range Patrol (LRP)~~
Package C – Meal, Ready-to-Eat (MRE)
Package J – First Strike Ration® (FSR)

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 this Packaging Requirements and Quality Assurance Provisions (PKG&QAP) document. 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 noncomparable to the product standard, the contractor shall submit a replacement FA or PDM for approval. In any event, all product produced must meet all requirements of this document including product standard comparability.

B. Appearance. The Type IX Buffalo style hot sauce shall have a slightly thick appearance.

C. Texture. The type II extra hot 4x hot sauce and type VII chili and lime hot sauce shall be thin. The Type IX Buffalo style hot sauce shall be uniformly smooth and slightly thick.

D. Net volume. For type II and type VII the net volume shall be not less than 1/8-fluid ounce. For type IX the net volume shall be not less than 1-fluid ounce.

E. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

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 all types specified, analytical procedures and testing shall be in accordance with A-A-20097F.

SECTION D

D-1 PACKAGING

A. Bottles. The product shall be packaged in 1/8-fluid ounce glass bottles in accordance with good commercial practice. Each bottle shall be filled to not less than 1/2 inch nor more than 1 inch from the open end of the bottle. Screw cap closures shall include a cap liner to prevent seepage of product from the bottle/cap interface. (Cap liners consisting of a foamed low density polyethylene core sandwiched between two solid layers of low density polyethylene have been demonstrated to satisfy this requirement). Screw caps shall be secured to the bottles with a band of plastic shrink film or plastic tape.

~~A~~B. Pouches.

(1) Pouch material. The pouch shall be fabricated from 1.75 mil acrylonitrile co-polymer sealant/chemical resistant adhesive/48 gauge SiOx PET/adhesive or chemical resistant adhesive/35 gauge aluminum foil/7# LDPE- EAA coextruded or chemical resistant adhesive/ink/48 gauge PET. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent. 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.

(2) Pouch construction. For type II and type VII product, the pouch shall be a flat style preformed pouch having maximum inside dimensions of 4-1/4 by 1-1/2 inches. For type IX product, the maximum inside dimensions of the pouch shall be 2-7/8 inches wide by 5-3/8 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (- 1/8, + 3/16 inch) wide seals. The 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. A tear nick, notch or serrations shall be provided to facilitate opening of the filled and sealed pouch.

(3) Pouch filling and sealing. For type II and type VII product, 1/8-fluid ounce of hot sauce shall be filled into the pouch. For type IX product, 1-fluid ounce of buffalo sauce shall be filled into the pouch. The pouch shall be sealed. The closure seal width shall be a minimum of 1/8 inch. 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 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.

D-2 LABELING

A. Bottles and ~~P~~pouches. Bottles and ~~P~~pouches shall be labeled in accordance with good commercial practice and with the following:

(1) Name and type of product (letters not less than 1/8 inch high)
(2) Ingredients
(3) Date 1/
(4) Net volume
(5) Name and address of packer

1/ Each bottle or 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. (Example, 14 February 2015 would be coded as 5045). The Julian day code shall represent the day the product was packaged into the pouch.

NOTE: Commercial graphics (colors, design and labeling) shall be submitted to the Contracting Officer for review and approval and to US Army Combat Capabilities Development Command - Soldier Center (FCDD-SCC-EMR) for review.

D-3 PACKING

A. Packing for bottles. Not more than 40 pounds of glass bottles shall be packed in a fiberboard shipping box conforming to RSC-L of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class WR, variety SW, grade V3c of ASTM D4727/D4727M Standard Specifications for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. The box shall be fitted with partitions creating an individual cell for each bottle. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

~~A~~B. Packing for pouches. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC-L of ASTM D5118/D 5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, burst grade 200 or ECT grade 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Sock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for ~~Fabrication of Fiberboard Shipping Boxes~~ Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 UNITIZATION

A. Unit loads. Boxes shall be arranged in unit loads in accordance with Type I, Class A or B of DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Shipping containers and unit loads shall be marked in accordance with DLA Troop Support 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 item.

(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, odor, flavor, and texture. Any failure to conform to the performance requirements or any appearance or palatability failure shall be cause for rejection of the lot.

(2) Periodic review evaluation. 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:

DEPARTMENT OF THE ARMY
FCDD-SCC-EMR
COMBAT CAPABILITIES DEVELOPMENT COMMAND-SOLDIER CENTER
15 GENERAL GREENE AVENUE
NATICK, MA 01760-5056

One lot shall be randomly selected during each calendar month of production or as otherwise

specified in the contract. Six (6) sample units shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within five (5) working days from the end of the production month from which they are randomly selected and upon completion of all USDA inspection requirements. The sample units will be evaluated for overall quality against the current first article or product demonstration model.

(3) Conformance inspection. Conformance inspection shall include the examinations/tests and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in A-A-20097F and Section C of this PKG&QAP document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in bottles or pouches. The sample unit shall be the contents of one bottle or one 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 4.0 for minor defects. Defects and defect classifications are listed in table I.

TABLE I. Product defects 1/ 2/

Category		Defect
Major	Minor	
		General
101		Product not type as specified.
		Appearance
	201	Product not a smooth suspension of uniform small particle size.
	202	Product stratifies or separates. 3/
		Odor and flavor
102		Product does not have a pungent odor.
103		Product does not have a pungent (heat value or bite) flavor.

TABLE I. Product defects 1/ 2/ - Continued

Category		Defect
Major	Minor	
		Type II extra hot 4x
	203	Product not a red to reddish-brown colored liquid.
104		Product flavor not well balanced or not peppery.
	204	Product texture not thin.
		Type VII chili and lime
	205	Product not a dark orange-red colored liquid.
105		Product does not possess a cumin and lime flavor or odor.
	206	Product texture not thin.
		Type IX Buffalo style
	207	Product not an orange-red colored liquid or does not have a slightly thick appearance.
106		Product does not possess a tangy, buttery flavor or odor.
107		Product texture not uniformly smooth or not slightly thick.

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.

3/ Minor separation, which upon light shaking disappears and results in a uniform, relatively stable suspension, is acceptable.

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 volume. The net volume shall be verified with the label on the package. Product not conforming to the net volume requirement in Section C of this PKG&QAP document shall be cause for rejection of the lot.

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

A. Packaging for bottles.

(1) Filled and sealed glass bottle examination. The filled and sealed bottles shall be examined for the defects listed in table II. The lot size shall be expressed in bottles. The sample unit shall be one bottle. 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 glass bottle defects 1/

Category		Defect
Major	Minor	
101		Broken or cracked bottle or leaking bottle.
102		Plastic shrink film or plastic tape missing on screw cap.
103		Unclean bottle. 2/
104		Bottle has foreign odor.
105		Not packaged as specified.
106		Cap liner missing from screw cap closures.

TABLE II. Filled and sealed glass bottle defects 1/ - Continued

Category		Defect
Major	Minor	
	201	Label missing or incorrect or illegible.
	202	Net volume less than 1/2 inch or more than 1 inch from the open end of the bottle.
	203	Screw cap not secured with shrink film or tape.

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

2/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause bottle damage (for example, metal filings), or generally detracts from the clean appearance of the bottle.

~~A~~B. Packaging for pouches.

(1) Pouch material certification. The pouch material shall be tested for these characteristics. A Certificate of Conformance (CoC) may be accepted as evidence that the characteristics conform to the specified requirements.

Characteristic	Requirement paragraph	Test procedure
Thickness of films for laminated material	D-1,~~A~~B(1)	ASTM D2103 1/
Aluminum foil thickness	D-1,~~A~~B(1)	ASTM B479 2/
Laminated material identification and construction	D-1,~~A~~B(1)	Laboratory evaluation

1/ Standard Specification for Polyethylene Film and Sheeting

2/ Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications

(2) Unfilled preformed pouch certification. A CoC may be accepted as evidence that unfilled 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 pouch examination. The filled and sealed 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 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		Not packaged as specified.
	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. 2/
	204	Presence of delamination. 3/

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 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 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.

~~B~~C. Methods of inspection.

(1) Seal testing. The pouch seals shall be tested for seal strength.

a. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the 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.

~~C~~D. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV. 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 IV. 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.

SECTION J REFERENCE DOCUMENTS

Unless otherwise specified, the applicable version of these documents is that which is active on the date of the solicitation or contract.

DLA Troop Support Forms

Form 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items
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

B479	Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil For Flexible Barrier, Food Contact and Other Applications
D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103	Standard Specification for Polyethylene Film and Sheeting
D4727/D4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes