

SECTION C

This document covers dehydrated cooked seafood chowder in a brickpack pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-S-017, SEAFOOD CHOWDER, COOKED, DEHYDRATED, PACKAGED IN A BRICKPACK POUCH, SHELF STABLE

Packages.

- Package A - Meal, Cold Weather (MCW)
- Package B - Food Packet, Long Range Patrol (LRP)

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 Performance-based Contract Requirements (PCR) 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 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 packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Dehydrated product.

(1) Appearance.

a. General. The finished product shall be a mixture of cooked clams, potatoes, Pacific shrimp and celery in a milk-based white sauce that has been dehydrated. The clam pieces, potato dices, shrimp, and celery pieces shall be discernable. The product shall be free from glazed surface areas or dark colored cores. The packaged food shall be free from foreign materials.

b. Clams. The clams shall be cooked, dehydrated clam pieces and a tan to light brown color.

c. Potatoes. The potatoes shall be cooked, dehydrated potato dices and an off-white color.

d. Shrimp. The shrimp shall be cooked, dehydrated Pacific shrimp in the original peeled weight range of 250/500 shrimp per pound. The shrimp shall be a light orange-pink color.

e. Celery. The celery shall be cooked, dehydrated celery pieces and a light to medium green color.

(2) Odor. The packaged food shall have a cooked, dehydrated milk and potato with low to moderate seafood odor. The packaged food shall be free from foreign odors.

(3) Texture. The product shall be fully dehydrated.

(4) Net weight. No individual pouch shall have a net weight of less than 126 grams.

D. Rehydrated product.

(1) Appearance.

a. General. The rehydrated seafood chowder shall be a mixture of cooked clams, potatoes, Pacific shrimp and celery in a thick, milk-based white sauce typical of a product that has been frozen and reheated. The rehydrated product shall be free from foreign materials.

b. Clams. The clams shall be discernable clam pieces and a tan to light brown color. The clams shall be free from shells or shell fragments.

c. Potatoes. The potatoes shall be discernable dices and an off white color.

d. Shrimp. The shrimp shall be identifiable and a light orange-pink with off-white color.

e. Celery. The celery shall be discernable pieces and a light to medium green color.

f. Sauce. The sauce shall be a cream to off-white color and shall be thick and smooth.

(2) Odor and flavor. The rehydrated seafood chowder shall have a moderate seafood, cooked milk and potato odor and flavor. The chowder shall have a moderate flavor of blended salt, onion, celery, and spice. The rehydrated product shall be free from foreign odors and flavors.

(3) Texture.

- a. General. The product shall fully rehydrate within ten minutes.
- b. Clams. The clam pieces shall be moderately chewy.
- c. Potatoes. The potato dices shall be slightly soft to slightly firm.
- d. Shrimp. The shrimp shall be tender and slightly fibrous.
- e. Sauce. The sauce shall be thick and creamy.

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

F. Analytical requirements.

- (1) Protein content. The protein content shall be not less than 24.0 percent.
- (2) Fat content. The fat content shall be not greater than 22.0 percent.
- (3) Sodium content. The sodium content shall be not greater than 1800 mg per 100 grams.

G. Moisture content. The moisture content shall be not greater than 2.5 percent.

H. Microbiological requirements. The aerobic plate count shall be not greater than 75,000 per gram in four of five samples and not greater than 150,000 per gram in any individual sample. The *Eschericia coli* count shall have no positive tubes in the standard 3 tube most probable number (MPN) technique.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING INGREDIENTS ARE FOR INFORMATION ONLY. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients. Cooked clams and clam juice, potatoes, cream, onions, nonfat dry milk, Pacific shrimp, celery, modified corn starch, butter, salt, maltodextrin, hydrolyzed wheat gluten, Worcestershire sauce, cultured whey, spices, corn oil, onion powder, sodium tripolyphosphate, potato starch, natural flavoring, partially hydrogenated soybean and cottonseed oils, calcium disodium EDTA, yeast extract, lactic acid and dehydrated bonito.

SECTION D

D-1 PACKAGING

Product shall be filled into pouches in accordance with the PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

D-2 LABELING

Each pouch shall be labeled in accordance with the PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

D-3 PACKING

Packing for shipment to ration assembler shall be in accordance with the PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

D-5 MARKING

Marking of shipping containers shall be in accordance with the PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

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
AMSRD-NSR-CF-F
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) 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 examinations/tests and methods of inspection cited in this section and in PACKAGING

REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in pouches. The sample unit shall be the contents of 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/ 3/

Category		Defect
<u>Major</u>	<u>Minor</u>	
<u>Dehydrated product</u>		
<u>Appearance</u>		
101		Product not a mixture of cooked clams, potatoes, Pacific shrimp, and celery in a milk-based white sauce that has been dehydrated.
102		Glazed surface area measuring more than 0.5 inch in any dimension. <u>4/</u>
103		Dark colored core in any dimension. <u>5/</u>
	201	Clam pieces or potato dices or shrimp or celery pieces not discernable.
	202	Clams not cooked, dehydrated clam pieces or not a tan to light brown color.
	203	Potatoes not cooked, dehydrated dices or not an off-white color.
	204	Shrimp not cooked, dehydrated Pacific shrimp or not a light orange-pink color.
	205	Celery not cooked, dehydrated pieces or not a light to medium green color.

TABLE I. Product defects 1/ 2/ 3/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Odor</u>
104		Packaged food does not have a cooked, dehydrated milk or potato with low to moderate seafood odor.
		<u>Texture</u>
105		Wet spots or soft spots. <u>5/</u>
		<u>Net weight</u>
	206	Net weight of an individual pouch less than 126 grams.
		<u>Rehydrated product 6/</u>
		<u>Appearance</u>
106		Rehydrated product not a mixture of cooked clams, potatoes, Pacific shrimp, and celery in a thick, milk-based white sauce typical of a product that has been frozen and reheated.
107		Clam shell or shell fragment measuring more than 0.3 inch in any dimension.
	207	Clam pieces not discernable or not a tan to light brown color.
	208	Potato dices not discernable or not an off-white color.
	209	Shrimp not identifiable or not a light orange-pink with off-white color.
	210	Celery pieces not discernable or not a light to medium green color.
	211	Sauce not a cream to off-white color.
	212	Sauce not thick or not smooth.

TABLE I. Product defects 1/ 2/ 3/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Odor and flavor</u>
108		Rehydrated product does not have a moderate seafood, cooked milk or potato odor or flavor or does not have a moderate flavor of blended salt, onion, celery, and spice.
		<u>Texture</u>
109		Hard cores due to incomplete water penetration. <u>7/</u>
	213	Clam pieces not moderately chewy.
	214	Potato dices not slightly soft to slightly firm.
	215	Shrimp not tender or not slightly fibrous.
	216	Sauce not thick or not creamy.

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. Foreign flavor is not applicable to dehydrated product.

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 is not applicable to dehydrated product.

3/ Type and size requirement for the shrimp shall be verified by supplier's Certificate of Conformance (CoC).

4/ Evidence of faulty dehydration.

5/ Evidence of incomplete dehydration.

6/ Rehydrate according to pouch instructions. Product that does not rehydrate within ten minutes shall be cause for rejection of the lot.

7/ Dry areas attributable to gristle and similar materials in the seafood shall not be considered as defects because they do not necessarily rehydrate properly.

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 hedonic scale to be considered acceptable.

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

(3) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches which have been selected at random from the lot. The composite sample shall be prepared and analyzed in accordance with the following methods of the Official Methods of Analysis (OMA) of AOAC International:

<u>Test</u>	<u>Method Number</u>
Protein	988.05, 991.20, 992.15
Fat	925.12, 985.15
Sodium	985.35, 984.27

Test results for protein and fat shall be reported to the nearest 0.1 percent. Test results for sodium shall be reported to the nearest 1 milligram per 100 grams. Government verification will be conducted through actual testing by a Government laboratory. Any nonconforming results shall be cause for rejection of the lot.

(4) Moisture content testing. Eight filled and sealed pouches shall be selected at random from the lot regardless of lot size. The contents of each pouch shall be blended to uniformity using a blender or a food processor. The blending must be rapid and conducted in such a way that minimum heat is transferred to the product and that the product has minimum exposure to atmospheric moisture. Each sample shall be tested for moisture content in accordance with the OMA of AOAC International, method 926.08 (except that the temperature-time cycle for moisture analysis shall be modified by using a temperature of 70°C for 16 hours at a pressure of not more than 100 mm of mercury). Test results shall be reported to the nearest 0.1 percent. Government verification will be conducted through actual

testing by a Government laboratory. Any result not conforming to the moisture requirement shall be cause for rejection of the lot.

(5) Microbiological testing. Five filled and sealed pouches shall be selected at random from the lot regardless of lot size. The pouched product shall be individually tested for microbiological levels in accordance with the OMA of AOAC International, for aerobic plate count, method 966.23 or 990.12, and for *E .coli*, method 966.24. The diluent shall be added to each sample of dry product and allowed to stand for 15 minutes before blending the sample. Government verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the microbiological requirements shall be cause for rejection of the lot.

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

Inspection for packaging, labeling, packing, and marking shall be in accordance with the PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

SECTION J REFERENCE DOCUMENTS

SPECIFICATIONS

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS
FOR DEHYDRATED PRODUCT IN A BRICKPACK POUCH.

NON-GOVERNMENTAL STANDARDS

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

ANSI/ASQ Z1.4-2003 Sampling Procedures and Tables for Inspection by
Attributes

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International