

SECTION C

This document covers fortified nut butters and nut spreads packaged in a flexible 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-20328B NUT BUTTERS AND NUT SPREADS**

Styles, class, textures, type, flavor, fortification, seasoning, and agricultural practices.

- | | |
|----------------------------|------------------|
| Style I | - Peanut Butter |
| Class A | - Regular |
| Texture 1 | - Smooth |
| Texture 3 | - Chunky/crunchy |
| Type a | - Stabilized |
|
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| Style II | - Peanut Spread |
| Class A | - Regular |
| Texture 1 | - Smooth |
| Type a | - Stabilized |
| Flavor 2 | - Chocolate |
|
 | |
| Fortification 2 | - Fortified |
| Seasoning (a) | - Salted |
| Agricultural practices (1) | - Conventional |

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

C. Grade standards. Style I products shall meet the USDA certification requirements for U.S. Grade A of the U.S. Standards for Grades of Peanut Butter in accordance with A-A-20328B. Style II products shall meet the USDA certification requirements for equivalent to U.S. Grade A of the U.S. Standards for Grades of Peanut Butter in accordance with A-A-20328B.

D. General. Style I peanut butter shall have no evidence of excessive heating or oiling off.

E. Appearance. Style I, Class A, Type a, finished product shall be a light brown color with a slight surface sheen.

F. Odor and flavor. Style I, Class A, Type a, packaged food shall have a freshly roasted and ground peanut odor or flavor.

G. Net weight. The net weight of an individual pouch shall be not less than 28 grams.

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

I. Fortification. Style I and Style II product shall be fortified with the following amounts:

Vitamin A	Not less than 2350 IU and not greater than 2850 IU per 100 grams
Vitamin C	Not less than 90 mg per 100 grams

J. Analytical and microbiological requirements. Analytical and microbiological requirements, procedures, and testing for aflatoxin, salt, standard plate count, yeast and mold, *Salmonella*, and *E. coli* shall be as specified in A-A-20328B.

SECTION D

D-1 PACKAGING

A. Packaging. The product shall be packaged in a barrier pouch.

(1) Pouch.

a. Pouch material. The pouch shall be fabricated from 0.002 inch thick ionomer or polyethylene film laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then laminated to 0.0005 inch thick polyester. 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. The complete exterior surface of the pouch shall be uniformly colored and shall conform to number 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of FED-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat style pouch having maximum inside dimensions of 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 inch, +3/16 inch) wide seals. The side and bottom 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. Alternatively, 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. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

c. Pouch filling and sealing. The product shall be filled 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. 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.

D-2 LABELING

A. Pouches. Each 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. The label shall contain the following information:

- (1) Name and flavor of product (letters not less than 1/8 inch high)
- (2) Ingredients
- (3) Date 1/
- (4) Net weight
- (5) Name and address of packer
- (6) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA regulations

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 2017 would be coded as 7045. The Julian day code shall represent the day the product was packaged into the pouch.

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 D5118/D5118M, 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 Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-5 MARKING

A. Shipping containers. Shipping containers 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 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 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
 RDNS-SEC-EMR
 NATICK SOLDIER SYSTEMS CENTER
 10 GENERAL GREENE AVENUE
 NATICK, MA 01760

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 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-20328B and Section C of this 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 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/

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	<u>General</u>
101		Product not style or not class or not texture or not type or not flavor or not fortification or not seasoning or not agricultural practices as specified.
102		Product shows evidence of excessive heating or oiling off.

TABLE I. Product defects 1/ 2/ 3/ - Continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
	201	Style I, Class A, Type a, product not a light brown color with a slight surface sheen.
	202	Style II, Class A, Texture 1, Type a, Flavor 2 product not smooth or not homogenous.
	203	Style II, Class A, Texture 1, Type a, Flavor 2 product not a medium brown color or does not have a slight surface sheen.
		<u>Odor and flavor</u>
103		Style I, Class A, Type a, product does not have a freshly roasted or ground peanut odor or flavor.
104		Style II, Class A, Texture 1, Type a, Flavor 2 product does not have a freshly roasted or ground peanut odor or flavor with mild cocoa notes.
		<u>Texture</u>
	204	Product does not spread easily.
	205	Product is thin or is more than slightly stiff.
	206	Style I, Class A, Type a, Texture 1 and Style II, Class A, Texture 1, Type a, Flavor 2 products do not have a very fine or not a very even texture.
	207	Style I, Class A, Type a, Texture 1 and Style II, Class A, Texture 1, Type a, Flavor 2 products have perceptible grainy nut particles.

TABLE I. Product defects 1/ 2/ 3/ - Continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	208	Style I, Class A, Type a, Texture 3 product does not have a partially fine or partially grainy texture or not with a substantial amount of nut particles larger than 1/16 inch in any dimension.
		<u>Net weight</u>
	209	Net weight of an individual pouch less than 28 grams.

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/ Style I product not meeting the USDA certification requirements for U.S. Grade A of the U.S. Standards for Grades of Peanut Butter in accordance with A-A-20328B shall be cause for rejection of the lot. Style II product not meeting the USDA certification requirements for equivalent to U.S. Grade A of the U.S. Standards for Grades of Peanut Butter in accordance with A-A-20328B 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 pouches 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.

(3) Fortification. The sample to be analyzed shall be a composite of eight filled and sealed pouches that 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>
Vitamin A	2001.13 <u>1/</u>
Ascorbic Acid (Vitamin C)	967.21, 967.22 <u>1/</u>

Test results shall be reported to the nearest milligram or microgram, as applicable.

1/ Tests will be conducted for vitamins A and C on the first production lot of a contract cycle. USDA will perform the verification testing and obtain a copy of the formulation used in the production of that lot. A Certificate of Conformance (CoC) for nutrient content for vitamins A and C will be provided on all future lots produced using the same formulation. If the formula is changed or a new contract starts, then another set of tests shall be conducted by USDA for vitamins A and C, and USDA will obtain a copy of the formulation.

(4) Analytical and microbiological tests. Analytical and microbiological testing for aflatoxin, salt, standard plate count, yeast and mold, *Salmonella*, and *E. coli* shall be as specified in A-A-20328B with the following notes applied.

NOTE: The following conditions apply for aflatoxin testing:

a. For prepackaged peanut butter or peanut spread received from a supplier and is not further processed, the contractor will furnish a Certificate of Analysis (COA) that the peanut butter ingredient represented is not greater than 15 ppb for aflatoxin.

b. For bulk peanut butter received, the contractor is responsible for providing a USDA COA stating that the bulk product is not greater than 15 ppb in aflatoxin. When end item lots are manufactured using that bulk peanut butter and both the bulk and end item lots' identities have been preserved, then no further aflatoxin testing is required.

c. If peanut butter is received in bulk and the conditions in (b) above are not met, each end item lot must be sampled and tested by USDA. End item lots determined to be not greater than 15 ppb in aflatoxin as evidenced by a USDA Certificate will be considered acceptable. Bulk peanut butter with aflatoxin greater than 15 ppb shall not be used as an ingredient.

NOTE: The following conditions apply for salt testing:

When bulk peanut butter is received for use in peanut butter or peanut spreads and the bulk peanut butter has been determined by USDA to not exceed 1.6 percent salt, and no additional ingredients are added post grading, no further testing for salt is required. Bulk lots must be maintained to ensure traceability of the finished product.

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

A. Packaging.

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

<u>Characteristic</u>	<u>Requirement paragraph</u>	<u>Test procedure</u>
Thickness of films for laminated material	D-1,A(1)a	ASTM D2103 <u>1/</u>
Aluminum foil thickness	D-1,A(1)a	ASTM B479 <u>2/</u>
Laminated material identification and construction	D-1,A(1)a	Laboratory evaluation
Color of laminated material	D-1,A(1)a	FED-STD-595 <u>3/</u>

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

3/ Colors Used in Government Procurement

(2) Unfilled pouch certification. A CoC may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A(1)a and b. When deemed necessary by the USDA, testing of the unfilled 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 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 pouch defects 1/

Category	Defect
<u>Major</u>	<u>Minor</u>
101	Tear or hole or open seal.
102	Seal width less than 1/16 inch. <u>2/</u>
103	Presence of delamination. <u>3/</u>
104	Unclean pouch. <u>4/</u>
105	Pouch has foreign odor.
106	Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
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. <u>2/</u>
	204 Presence of delamination. <u>3/</u>

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. 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 pouch seal testing. The seals of the unfilled pouch shall be tested for seal strength in accordance with ASTM F88/F88M, 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 rejection of the lot.

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M. 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 the closure seal of each pouch in the sample. The average seal strength of the closure shall be calculated by averaging the three specimens cut from that closure. 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. 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 end 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. Packing.

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

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. <u>1/</u>
	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 Form

Form 3556 Marking Instructions for Boxes, Sacks, and Unit Loads of
Perishable and Semiperishable Subsistence

FEDERAL STANDARD

FED-STD-595 Colors Used in Government Procurement

GOVERNMENT PUBLICATIONS

U.S. Standards for Grades of Peanut Butter

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC) 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

PKG&QAP A-A-20328B
24 November 2015
SUPERSEDING
PKG&QAP A-A-20328B
13 August 2012

D4727/D4727M Standard Specification for Corrugated and Solid
Fiberboard Sheet Stock (Container Grade) and Cut
Shape

D5118/D5118M Standard Practice for Fabrication of
Fiberboard Shipping Boxes

F88/F88M Standard Test Method for Seal Strength of
Flexible Barrier Materials

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International