

**METRIC**

**A-A-20100C**

**May 1, 2002**

**SUPERSEDING**

**A-A-20100B**

**April 21, 1997**

## **COMMERCIAL ITEM DESCRIPTION**

### **SHORTENING COMPOUNDS**

**The U.S. Department of Agriculture (USDA) has authorized the use of this Commercial Item Description.**

**1. SCOPE.** This Commercial Item Description (CID) covers shortening compounds, packed in commercially acceptable containers, suitable for use by Federal, State, local governments, and other interested parties; and as a component of operational rations.

#### **2. PURCHASER NOTES.**

##### **2.1 Purchasers *shall specify* the following:**

- Type(s) required (Sec. 3).
- When analytical requirements are different than specified (Sec. 6.1).
- When analytical requirements need to be verified (Sec. 6.2).
- Manufacturer's/distributor's certification (Sec. 9.2) or USDA certification (Sec. 9.3).

##### **2.2 Purchasers *may specify* the following:**

- Manufacturer's quality assurance (Sec. 9.1 with 9.1.1) or (Sec. 9.1 with 9.1.2).
- Packaging requirements other than commercial (Sec. 10).

**3. CLASSIFICATION.** The shortening compounds shall conform to the following list which shall be specified in the solicitation, contract, or purchase order.

#### **Types.**

- Type I** - General purpose  
**Type II** - Bakery (emulsifier-type)  
**Type III** - Liquid shortening (deep-fry cooking)

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### **4. MANUFACTURER'S/DISTRIBUTOR'S NOTES. Manufacturer's/distributor's products shall meet the requirements of the:**

- Salient characteristics (Sec. 5).
- Analytical requirements: *as specified by the purchaser* (Sec. 6).
- Manufacturer's/distributor's product assurance (Sec. 7).
- Regulatory requirements (Sec. 8).
- Quality assurance provisions: *as specified by the purchaser* (Sec. 9).
- Packaging requirements other than commercial: *as specified by the purchaser* (Sec. 10).

### **5. SALIENT CHARACTERISTICS.**

**5.1 Processing.** The shortening compounds shall be processed in accordance with good manufacturing practices (21 CFR Part 110).

**5.2 Type I.** The general purpose shortening shall consist only of partially hydrogenated deodorized vegetable oil or blends of vegetable oils. The product shall not contain antioxidants or antifoaming agents.

**5.3 Type II.** The bakery (emulsifier-type) shortening shall contain vegetable fats and oils, which have been deodorized. The fats and oils shall have been processed by hydrogenation. The product may contain antioxidants. Antifoaming agents shall not be incorporated into the product. The shortening shall contain mono- and diglycerides in the amount specified in Table I.

**5.4 Type III.** The liquid shortening (deep-fry cooking) shall consist only of deodorized vegetable fats and oils, or blends of vegetable oils. The fats and oils shall have been processed by hydrogenation. The liquid shortening (deep-fry cooking) shall contain antifoaming agents and may contain antioxidants.

**5.5 Flavor and odor.** The shortening compounds shall be free from rancidity, sour, or other objectionable flavors or odors.

**5.6 Consistency.** Type I and II shortening compounds shall be uniform and smooth. The texture shall be plastic and workable over a temperature range of 18.3° to 35°C (65° to 95°F). Type III shortening compound shall be fluid at 21.1°C (70°F).

**5.7 Foreign material.** All ingredients shall be clean, sound, wholesome, and free from evidence of rodent or insect infestation. The shortening compound shall be free from foreign material, such as, but not limited to, dirt, insect parts, hair, wood, glass, or metal.

## 6. ANALYTICAL REQUIREMENTS.

**6.1 Analytical requirements.** Unless otherwise specified in the solicitation, contract, or purchase order, the analytical requirements for the shortening compounds shall conform to the analytical requirements as specified in Table I. Analyses shall be made in accordance with Methods of the American Oil Chemists Society (AOCS).

**TABLE I. Analytical data**

Requirements	I	Types II	III
Free fatty acids as oleic acid (percent), maximum	0.05	0.05	0.05
Peroxide value (meq of Peroxide/kg of fat), maximum	1.0	1.0	0.5
Dropping point, range	46.7°C to 51.1°C (116°F to 124°F)	46.1°C to 50.0°C (115°F to 122°F)	-
Stability, Oil Stability Index (OSI) at 110°C (230°F), minimum hours	32	32	15
Smoke point, minimum	218.3°C (425°F)	-	218.3°C (425°F)
Alpha mono- and diglycerides, (percent), range	-	1.5 to 5.5	-
Moisture and volatile matter (percent), maximum	0.10	0.20 <u>1/</u>	0.10
Lovibond color (red), maximum	2.5	2.5	2.5

1/ Applicable to moisture only. If shortening is packed in cans, the maximum moisture shall not exceed 0.07 percent.

**TABLE II. Solid fat index (SFI)**

Type	Temperatures		
	10°C (50°F)	21.1°C (70°F)	33.3°C (92°F)
I	23 to 31	16 to 24	7 to 15
II	24 to 38	18 to 30	11 to 25
III	0 to 24	0 to 8	0 to 6

**6.2 Product verification.** When USDA verification of analytical requirements is specified in the solicitation, contract, or purchase order, the following procedures will be followed. Analytical testing shall be performed on a composite sample. The composite sample shall be 454 grams (1 pound) and prepared from subsamples drawn from randomly selected containers. The number of subsamples used to create the composite shall be based on USDA procedures.

**6.3 Analytical testing.** When specified in the solicitation, contract, or purchase order, the analyses shall be in accordance with the following methods from the Official Methods of the American Oil Chemists Society (AOCS).

<u>Test</u>	<u>Method</u>
Free fatty acids	Ca 5a-40
Peroxide value	Cd 8-53
Dropping point	Cc 18-80
Oil stability	Cd 12b-92
Smoke point	Cc 9a-48
Alpha mono- and diglycerides	Cd 11c-93
Moisture and Volatile Matter	Ca 2f-93
Lovibond red color	Cc 13e-92
Solid fat index	Cd 10-57

**6.4 Test results.** The test results for free fatty acids shall be reported to the nearest 0.01 percent. The test results for alpha mono- and diglycerides and moisture shall be reported to the nearest 0.1 percent. The test results for peroxide value and Lovibond color shall be reported to the nearest 0.1 value and solid fat index to the nearest value. The test results for dropping point and smoke point shall be reported to the nearest °C. The test result for fat stability shall be reported to the nearest hour. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

**7. MANUFACTURER'S/DISTRIBUTOR'S PRODUCT ASSURANCE.** The manufacturer/distributor shall certify that the shortening compounds provided shall meet the salient characteristics of this CID, conform to their own specifications, standards, and quality assurance practices, and be the same shortening compounds for sale in the commercial market. The purchaser reserves the right to require proof of conformance.

**8. REGULATORY REQUIREMENTS.** The delivered shortening compounds shall comply with all applicable Federal, State, and local mandatory requirements and regulations relating to the preparation, packaging, labeling, storage, distribution, and sale of shortening compounds within the commercial marketplace. Delivered shortening compounds shall comply with all applicable provisions of the Federal Food, Drug, and Cosmetic Act, the Fair Packaging and Labeling Act, and regulations promulgated thereunder.

**9. QUALITY ASSURANCE PROVISIONS.** *Purchaser shall specify 9.2 or 9.3; purchaser may specify 9.1 with 9.1.1 or 9.1 with 9.1.2.*

**9.1 Manufacturer's quality assurance.** When required in the solicitation, contract, or purchase order, the product manufacturer shall be required to provide evidence, by certificate, that the manufacturing plant has undertaken one of the following quality assurance measures within 12 months prior to providing a bid, or no later than 10 business days from the date of awarding of the contract. Failure to provide this documentation within the proper time frame may result in the contract being terminated for cause.

**9.1.1 Plant systems audit.** A plant systems audit (PSA) conducted by USDA, Federal Grain Inspection Service (FGIS), or another audit performed by a third party auditing service is required within 12 months prior to the date of the awarding of the contract. *(A FGIS PSA verifies the manufacturer's capability to produce products in a clean, sanitary environment in accordance with Title 21 Code of Federal Regulations, Part 110 – Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food; and verifies that the manufacturer has in place an internal quality assurance program. The FGIS PSA determines the manufacturer's ability to produce under this CID, if the products of interest are identified at the time of the PSA.)*

**9.1.2 Plant survey.** A plant survey conducted by USDA/FGIS, or another survey performed by a third party auditing service is required within 12 months prior to the date of the awarding of the contract. *(A FGIS plant survey audit verifies that, at the time of the survey, the manufacturer produces products in a clean, sanitary environment in accordance with Title 21 Code of Federal Regulations, Part 110 – Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food.)*

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**9.2 Manufacturer's/distributor's certification.** When required in the solicitation, contract, or purchase order, the manufacturer/distributor will certify that the finished shortening compounds distributed meets or exceeds the requirements of this CID.

**9.3 USDA certification.** When required in the solicitation, contract, or purchase order that product quality or acceptability or both be determined, the FGIS shall be the certifying program. The FGIS inspectors shall certify the quality and acceptability of the shortening compounds in accordance with FGIS procedures which include selecting random samples of the shortening compounds, evaluating the samples for conformance with the salient characteristic of this CID and other contractual requirements, and documenting the findings on official score sheets and/or certificates. In addition, when required in the solicitation, contract, or purchase order, FGIS inspectors will examine the shortening compounds for conformance to the United States Standards of Condition of Food Containers in effect on the date of the solicitation.

**10. PACKAGING.** Preservation, packaging, packing, labeling, and case marking shall be commercial unless otherwise specified in the solicitation, contract, or purchase order.

**11. USDA INSPECTION NOTES.** When Section 9.3 is specified in the solicitation, contract, or purchase order, USDA certification shall include evaluation of the quality and condition of the samples of shortening compounds, and compliance with requirements in the following areas:

- Salient characteristics (Sec. 5).
- Analytical requirements *when specified in the solicitation, contract, or purchase order* (Sec. 6.2). When USDA analytical testing is specified, FGIS inspection personnel shall select samples and submit them to the USDA, FGIS laboratory for analysis.
- Packaging requirements (Sec. 10 or as specified in the solicitation, contract, or purchase order).

**12. REFERENCE NOTES.**

**12.1 USDA certification contact.** For USDA, FGIS certification, contact the **Policy and Procedures Branch, Field Management Division, FGIS, Grain Inspection, Packers and Stockyard Administration (GIPSA), USDA, STOP 3632, 1400 Independence Avenue, SW, Washington, DC 20250-3632, telephone (202) 720-0252, Fax (202) 720-1015, or via E-mail: [HenryC.Greenwood@usda.gov](mailto:HenryC.Greenwood@usda.gov) or [JohnC.Giler@usda.gov](mailto:JohnC.Giler@usda.gov).**

**12.2 Analytical testing and technical information.** For USDA, FGIS technical information on analytical testing, contact the **Branch Chief, Technical Service Division, Analytical Reference and Testing Branch, FGIS Technical Center, GIPSA, USDA, 10383 North Ambassador Drive, Kansas City, Missouri 64153-1394, telephone (816) 891-0444 or via E-mail:**

**[LynnA.Polston@usda.gov](mailto:LynnA.Polston@usda.gov) or [TimD.Norton@usda.gov](mailto:TimD.Norton@usda.gov).** For USDA, FGIS technical information contact: **Policy and Procedures Branch, FGIS, GIPSA, USDA, STOP 3632, Washington, DC 20250-3632, telephone (202) 720-1732, Fax (202) 720-1015, or via E-mail: [HenryC.Greenwood@usda.gov](mailto:HenryC.Greenwood@usda.gov).**

### 12.3 Sources of documents.

#### 12.3.1 Sources of information for nongovernmental documents is as follows :

Copies of the Official Methods of the American Oil Chemists' Society may be obtained from: **American Oil Chemists' Society, P.O. Box 3489, Champaign, IL 61826-3489, telephone (217) 359-2344 or Fax (217) 351-8091. Internet address: <http://www.aocs.org>.**

#### 12.3.2 Sources of information for governmental documents are as follows :

Applicable provisions of the Fair Packaging and Labeling Act are contained in 16 CFR Parts 500 to 503. The Federal Food, Drug, and Cosmetic Act are contained in 21 CFR Parts 1 to 199. These document may be purchased from: **Superintendent of Documents, ATTN: New Orders, P.O. Box 371954, Pittsburgh, PA 15250-7954. Credit card (MasterCard or Visa) purchases may be made by calling the Superintendent of Documents on (202) 512-1800 or on the Internet at: <http://www.access.gpo.gov/nara>.**

Copies of this CID and the United States Standards for Condition of Food Containers are available from: **Head, Food Quality Assurance Staff, FVP, AMS, USDA, STOP 0243, 1400 Independence Ave., SW, Washington, DC 20250-0243, telephone (202) 720-9939, Fax (202) 690-0102, via E-mail: [FQAStaff@usda.gov](mailto:FQAStaff@usda.gov) or on the Internet at: <http://www.ams.usda.gov/fv/fvqual.htm>.**

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: **Commander, Defense Supply Center Philadelphia, ATTN: DSCP-HSL, 700 Robbins Avenue, Philadelphia, PA 19111-5092 or FAX (215) 737-2963, or via E-mail: [sagallagher@dscp.dla.mil](mailto:sagallagher@dscp.dla.mil).**

Military activities should submit requests for copies of this CID to: **Standardization Documents Order Desk, Document Automation and Production Service, 700 Robbins Avenue,**

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**Building 4D, Philadelphia, PA 19111-5094.**

**MILITARY INTERESTS:**

**CIVIL AGENCY COORDINATING ACTIVITIES:**

**Custodians**

Army - GL  
Navy - SA  
Air Force - 35

DOJ - BOP  
HHS - NIH, IHS  
USDA - FV  
VA - OSS

**Review Activities**

**PREPARING ACTIVITY:**

Army - MD, QM  
Navy - MC

DLA - SS  
(Project No. 8945-P085)

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