

METRIC

A-A-20308A  
April 10, 2009  
SUPERSEDING  
A-A-20308  
August 22, 2002

## COMMERCIAL ITEM DESCRIPTION

### MACARONI AND CHEESE MIX, DRY

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

**1. SCOPE.** This CID covers dry macaroni and cheese mix (macaroni and cheese), packed in commercially acceptable containers, suitable for use by Federal, State, local governments, and other interested parties.

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

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

- Macaroni product(s), cheese sauce color(s), preparation method(s), fat content(s), sodium content(s), and package size(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. 10.2) or USDA certification (Sec. 10.3).

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

- When the cheeses used for the macaroni and cheese are to be graded or inspected by the Dairy Grading Branch (DGB), Dairy Programs (DP), Agricultural Marketing Service (AMS), USDA (Sec. 9).
- Manufacturer's quality assurance (Sec. 10.1 with 10.1.1) or (Sec. 10.1 with 10.1.2).
- Packaging requirements other than commercial (Sec.11).

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

**Macaroni products, cheese sauce colors, preparation methods, fat contents, sodium contents, and package sizes.**

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**Macaroni product I** - Enriched macaroni products made from wheat semolina (21 CFR § 139.115)

**Macaroni product II** - Enriched macaroni products with fortified protein made from wheat semolina (21 CFR §139.117)

**Macaroni product III** - Macaroni products made from wheat semolina (21 CFR § 139.110)

**Macaroni product IV** - Enriched macaroni products (21 CFR § 139.115)

**Macaroni product V** - Enriched macaroni products with fortified protein (21 CFR § 139.117)

**Macaroni product VI** - Macaroni products (21 CFR § 139.110)

**Macaroni product VII** - Whole wheat macaroni products (21 CFR § 139.138)

**Cheese sauce color A** - Colored - yellow

**Cheese sauce color B** - Uncolored - white

**Preparation method 1** - Prepared with the addition of water

**Preparation method 2** - Prepared with the addition of water, milk, and butter/margarine

**Preparation method 3** - Other

**Fat content a** - Less than 6 g per 25.8 g (1/4 cup) serving of dry mix (Reduced fat (21 CFR §101.62(b)))

**Fat content b** - More than 6.1 g and less than 10 g per 25.8 g (1/4 cup) serving of dry mix

**Fat content c** - Other

**Sodium content (1)** - Less than 900 mg per 25.8 g (1/4 cup) serving of dry mix

**Sodium content (2)** - More than 901 mg and less than 1100 mg per 25.8 g (1/4 cup) serving of dry mix

**Sodium content (3)** - Other

**Package size (a)** - 680 g (24 oz)

**Package size (b)** - 737 g (26 oz)

**Package size (c)** - Other

**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 and 10).
- Packaging requirements other than commercial: *as specified by the purchaser* (Sec. 11).

## 5. SALIENT CHARACTERISTICS.

**5.1 Processing.** The macaroni and cheese shall be prepared in accordance with current good manufacturing practices (21 CFR Part 110).

**5.2 Ingredients.** The macaroni and cheese shall consist of macaroni, dried cheese sauce with spices, and safe and suitable thickeners.

**5.2.1 Macaroni products.** The macaroni products shall comply with the U.S. Food and Drug Administration (FDA) Standards of Identity: Macaroni Products (21 CFR § 139.110), Enriched Macaroni Products (21 CFR § 139.115), Enriched Macaroni Products with Fortified Protein (21 CFR § 139.117), and Whole Wheat Macaroni Products (21 CFR § 139.138). The macaroni products shall have sufficient wall thickness to maintain its distinctive shape when prepared according to manufacturer's directions. When specified in the solicitation, contract, or purchase order, the macaroni shall be prepared from wheat semolina.

**5.2.2 Dehydrated cheese sauce.** The cheeses used in the dehydrated cheese sauce shall comply with the FDA Standard of Identity for Cheeses and Related Cheese Products (21 CFR Part 133) or as specified in CID A-A-20208, Cheese, Cheddar, Reduced, Fat **1/**. The dehydrated cheese sauce shall contain Cheddar cheese (21 CFR § 133.113) or as stated in CID A-A-20208, Cheese, Cheddar, Reduced, Fat; thickeners, flavorings (natural and/or artificial), and appropriate spices, including salt. Other cheeses such as, but not limited to: American (21 CFR § 133.123 and 21 CFR § 133.169), Blue (21 CFR § 133.106), Granular (21 CFR § 133.144), Romano (21 CFR § 133.183), Swiss (21 CFR § 133.195), and Club (21 CFR § 133.123) may be used. Other spices common to cheese sauces, annatto, paprika, beta carotene, and FD&C colors may be used.

**1/** Reduced fat Cheddar cheese should contain between 25 to 33.3 percent less fat than that of Cheddar cheese and complies with all applicable Federal regulations including those contained in 21 CFR § 133.113 for Cheddar cheese, 21 CFR § 101.62 for nutrient content claims for fat, and 21 CFR § 130.10 for foods named by use of a nutrient content claim and standardized term.

## 5.3 Prepared product.

**5.3.1 Appearance.** When prepared according to manufacturer's directions, the macaroni and cheese shall be well blended. The overall appearance shall not be mushy or pasty. The cheese sauce shall have the appropriate color for the type of cheese sauce specified by the purchaser. There shall be no foreign color to the product.

**5.3.2 Odor and taste.** The prepared macaroni and cheese shall have an odor and taste characteristic of prepared macaroni and cheese. The cheese sauce shall have a mild Cheddar

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cheese flavor, with pronounced notes of tanginess, butteriness, and saltiness, with no objectionable aftertaste. There shall be no off notes or tastes such as, but not limited to, burnt, scorched, stale, rancid, or moldy.

**5.3.3 Texture.** The texture of the cooked macaroni shall not be rubbery, mushy, or pasty. The prepared cheese sauce consistency shall be smooth, moderately thick, with no lumps.

**5.4 Finished product.**

**5.4.1 Dehydrated cheese sauce.** The dehydrated cheese sauce shall be packaged to prevent oxygen penetration.

**5.4.2 Foreign material.** The macaroni and cheese shall not exceed the specified FDA tolerance for “Defect Action Levels” (21 CFR § 110.110).

**5.4.3 Age requirement.** Unless otherwise specified in the solicitation, contract, or purchase order, the dry macaroni and cheese mix shall be manufactured not more than 60 days prior to delivery.

**6. ANALYTICAL REQUIREMENTS.**

**6.1 Analytical requirements.** Unless otherwise specified in the solicitation, contract, or purchase order, analytical requirements for the macaroni and cheese shall be as follows:

<b><u>Test</u></b>	<b><u>Tolerance</u></b>
Moisture	Shall not exceed 13.0 percent for the dry macaroni
Monosodium glutamate	Shall not exceed 1.0 percent per 227 g (8 oz) of prepared product.
Fat content	Shall not exceed the limit specified by the purchaser.
Sodium content	Shall not exceed the limit specified by the purchaser.
Viscosity	4.5 to 7.5 centimeters in 30 seconds at 71.1°C (160°F)
Coagulase positive <i>Staph. aureus</i>	Less than 100 per gram
Salmonella	Shall be negative

**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 g (1 lb) and prepared from subsamples drawn from randomly selected containers. Subsamples shall be a minimum of one box of dry macaroni and cheese mix and shall contain the

appropriate number of boxes of dry macaroni and cheese mix necessary to yield a 454 g (1 lb) sample when composited.

**6.3 Analytical testing.** When specified in the solicitation, contract, or purchase order, analyses shall be made in accordance with the following Official Methods of Analysis of the AOAC International or methods specified below:

<u>Test</u>	<u>Method</u>
Moisture (dry macaroni)	926.07, 985.14
Monosodium glutamate	970.37
Fat (as dry mix)	925.12
Sodium (as dry mix)	969.23 <u>2/</u>
Viscosity	Bostwick Consistometer
Coagulase positive <i>Staph. aureus</i>	975.55, 2003.07, or Direct Plate Count <u>3/</u>
Salmonella	967.26, 986.35, 2003.09, 2004.03, or Section C-7 <u>4/</u>

2/ Dry ashing and flame emission procedures are to be used.

3/ Chapter 12, 8<sup>th</sup> Edition, FDA Bacteriological Analytical Manual (BAM) or the FDA BAM Online.

4/ Chapter 5, 8<sup>th</sup> Edition, FDA BAM or the FDA BAM Online.

**6.4 Test results.** The test results for monosodium glutamate shall be reported to the nearest 0.1 percent. The test results for fat content shall be reported to the nearest 0.1 g. The test results for sodium content shall be reported to the nearest mg. The test results for viscosity shall be reported to the nearest 0.1 cm. The test result for coagulase positive *Staph. aureus* shall be reported as the number of coagulase positive *Staph. aureus* per gram. The test result for Salmonella shall be reported as positive or negative. Any result not conforming to the analytical requirements shall be cause for rejection the lot.

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

**8. REGULATORY REQUIREMENTS.** The delivered macaroni and cheese shall comply with all applicable Federal and State mandatory requirements and regulations relating to the preparation, packaging, labeling, storage, distribution, and sale of the macaroni and cheese within

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the commercial marketplace. Delivered macaroni and cheese shall comply with all applicable provisions of the Federal Food, Drug, and Cosmetic Act, the Fair Packaging and Labeling Act, and regulations promulgated thereunder. The delivered macaroni and cheese shall comply with the allergen labeling requirements of the Federal Food, Drug, and Cosmetic Act.

**9. QUALITY ASSURANCE PROVISIONS FOR THE CHEESES.** Purchaser shall specify in the solicitation, contract, or purchase order when the following provisions shall be met.

**9.1 Manufacturer's quality assurance.** When required in the solicitation, contract, or purchaser order, the cheese manufacturer shall be required to have their facilities inspected by USDA, AMS, DP, DGB, and be eligible for listing in Section I of the AMS publication "Dairy Plants Surveyed and Approved for USDA Grading Service." (An AMS, DP plant survey verifies that, at the time of the survey, the manufacturer produces products in a clean, sanitary environment and satisfactorily meets the requirements contained in 7 CFR Part 58 General Specification for Dairy Plants Approved for USDA Inspection and Grading Service.)

**9.2 USDA, DP certification.** When required in the solicitation, contract, or purchase order, the USDA, AMS, DP, DGB shall certify that the cheeses used for the manufacturing of dry macaroni and cheese mix meets or exceeds the requirements of the Standard of Identity for Cheeses and Related Cheese Products (21 CFR Part 133) or as specified in CID A-A-20208, Cheese, Cheddar, Reduced, Fat. The DGB inspectors shall certify the cheeses in accordance with DGB procedures which include random sampling of the cheeses; evaluating the samples for conformance with the appropriate U.S. Standards for Grade, USDA Specifications, and/or CID; and documenting the requirements on official DGB certificates.

**10. QUALITY ASSURANCE PROVISIONS.** *For finished product, the purchaser shall specify 10.2 or 10.3; purchaser may specify 10.1 with 10.1.1 or 10.1 with 10.1.2.*

**10.1 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.

**10.1.1 Plant systems audit.** A plant systems audit (PSA) shall be conducted by USDA, AMS, or other third party auditing service is required within 12 months prior to the date of the awarding of the contract. *(An AMS 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 have in place an internal quality assurance program. The AMS PSA determines the*

*manufacturer's ability to produce under this CID, if the products of interest are identified at the time of the PSA.)*

**10.1.2 Plant survey.** A plant survey shall be conducted by USDA, AMS, or other third party auditing service is required within 12 months prior to the date of the awarding of the contract. *(An AMS 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.)*

**10.2 Manufacturer's/distributor's certification.** When required in the solicitation, contract, or purchase order, the manufacturer/distributor will certify that the prepared macaroni and cheese distributed meets or exceeds the requirements of this CID.

**10.3 USDA certification.** When required in the solicitation, contract, or purchase order that product quality and acceptability or both be determined, the Processed Products Branch (PPB), Fruit and Vegetable Programs (FV), AMS, USDA, shall be the certifying program. PPB inspectors shall certify the quality and acceptability of the prepared macaroni and cheese in accordance with PPB procedures which include selecting random samples of the prepared macaroni and cheese, evaluating the samples for conformance with the salient characteristics of this CID and other contractual requirements, and documenting the findings on official PPB score sheets and/or certificates. In addition, when required in the solicitation, contract, or purchase order, PPB inspectors will examine the packaged macaroni and cheese for conformance to the United States Standards for Condition for Food Containers in effect on the date of the solicitation.

**11. PACKAGING.** Preservation, packaging, packing, labeling, and case marking shall be as specified in the solicitation, contract, or purchase order.

**12. USDA INSPECTION NOTES.** When Sec. 10.3 is specified in the solicitation, contract, or purchase order, USDA certification shall include evaluation of the quality and condition of samples of packaged prepared macaroni and cheese, and compliance with requirements in the following areas:

- Salient characteristics (Sec. 5).
- Analytical requirements *when specified in the solicitation, contract, or purchase order* (Sec. 6.1). When USDA analytical testing is specified PPB inspection personnel shall select samples and submit them to the USDA, Science and Technology Programs (S&TP) laboratory for analysis.
- Packaging requirements (Sec. 11 or as specified in the solicitation, contract, or purchase order).

### 13. REFERENCE NOTES.

#### 13.1 USDA certification contacts.

**13.1.1 Macaroni and cheese certification.** For USDA certification, contact the **Branch Chief, PPB, FV, AMS, USDA, STOP 0247, 1400 Independence Avenue, SW, Washington, DC 20250-0247, telephone (202) 720-4693, Fax (202) 690-1527, or via E-mail: [terry.bane@ams.usda.gov](mailto:terry.bane@ams.usda.gov).**

**13.1.2 Cheese certification.** For USDA certification of the cheeses, contact the **Branch Chief, DGB, DP, AMS, USDA, STOP 0230, 1400 Independence Ave., SW, Washington, DC 20250-0230, telephone (202) 720-7471 or on the Internet at: [www.ams.usda.gov/dairygrading](http://www.ams.usda.gov/dairygrading).**

**13.2 Analytical testing and technical information.** For USDA technical information on analytical testing, contact the **Branch Chief, Technical Service Branch, S&TP, AMS, USDA, STOP 0272, 1400 Independence Avenue, SW, Washington, DC 20250-0272, telephone (202) 690-0621, or via E-mail: [shirlevj.wright@ams.usda.gov](mailto:shirlevj.wright@ams.usda.gov).**

#### 13.3 Sources of documents.

##### 13.3.1 Source of information for nongovernmental document is as follows:

Copies of the Official Methods of Analysis of the AOAC International and the FDA Bacteriological Analytical Manual (BAM), either printed or on CD-ROM versions, may be obtained from: **AOAC International, 481 North Frederick Avenue, Suite 500, Gaithersburg, MD 20877, telephone (202) 924-7077. Internet address: <http://www.aoac.org>.**

##### 13.3.2 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 documents may be purchased from: **Superintendent of Documents, New Orders, P.O. Box 371954, Pittsburgh, PA 15250-7954. Credit card (Visa, MasterCard, Discover/NOVUS, and American Express) purchases may be made by calling the Superintendent of Documents on (866) 512-1800, (202) 512-1800, or on the Internet at: <http://www.gpoaccess.gov/nara/index.html>.**

Copies of the FDA Bacteriological Analytical Manual (BAM) are available online from: **FDA, Center of Food Safety and Applied Nutrition on the Internet at: <http://www.cfsan.fda.gov/~ebam/bam-toc.html>.**

The Food Defect Action Levels Handbook for commodities can be located at the following Internet website <http://vm.cfsan.fda.gov/~dms/dalbook.html>. A printed version of this booklet may be obtained by written request to: Industry Activities Staff (HFS-565) Center for Food Safety and Applied Nutrition FDA 200 C Street S.W., Washington, DC 20204.

Copies of the Dairy Plants Surveyed and Approved for USDA Grading Service are available from: **Branch Chief, DGB, DP, AMS, USDA, STOP 0230, 1400 Independence Ave., SW, Washington, DC 20250-0230, telephone (202) 720-7471 or on the Internet at: [www.ams.usda.gov/dairygrading](http://www.ams.usda.gov/dairygrading).**

Copies of this CID, the United States Standards for Condition for Food Containers, and beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this CID are available from and/or provided to: **Branch Chief, PPB, FV, AMS, USDA, STOP 0247, 1400 Independence Avenue, SW, Washington, DC 20250-0247, telephone (202) 720-9939, Fax (202) 690-1527, via E-mail: [FQASStaff@ams.usda.gov](mailto:FQASStaff@ams.usda.gov) or on the Internet at: <http://www.ams.usda.gov/FQAS>.**

Military activities should submit requests for copies of this CID to: **Standardization Documents Order Desk, Document Automation and Production Service, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.**

**MILITARY INTERESTS:**

**CIVIL AGENCY COORDINATING ACTIVITIES:**

**Military Coordinating Activity**

Army - GL

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

**Custodians**

Army - GL  
Navy - SA  
Air Force - 35

**PREPARING ACTIVITY:**

USDA - FV

**Review Activities**

Army - MD, QM  
Navy - MC  
DLA - SS

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