COMMERCIAL ITEM DESCRIPTION

MACARONI AND CHEESE MIX

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

1. SCOPE. This CID covers macaroni and cheese mix, packed in commercially acceptable containers, suitable for use by Federal, State, local governments, and other interested parties. Please note: This document does not guarantee purchase of this item by USDA.¹

2. PURCHASER NOTES.

2.1 Purchasers must specify the following:

- Macaroni product(s), flour type(s), shape(s), cheese sauce color(s), cheese mix composition(s), cheese flavor(s), preparation method(s), fat content(s), sodium content(s), package type(s), and agricultural practice(s) desired (Sec. 3).
- When analytical requirements are different than specified (Sec. 7.1).
- When viscosity, coagulase positive Staphylococcus aureus, and Salmonella testing is required (Sec. 7.2).
- When compliance with analytical requirements must be verified (Sec. 7.2).
- Manufacturer’s/distributor’s certificate (Sec. 10.3) or USDA certification (Sec. 10.4).

2.2 Purchasers may specify the following:

- Food Defense (Sec. 10.1) and Manufacturer’s Quality Assurance (Sec. 10.2). Purchaser may specify one of the following combinations: Sec. 10.1.1 with 10.2.1 or 10.1.2 with 10.2.2.
- Packaging requirements other than commercial (Sec. 11).

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

¹ USDA purchase specifications are available at: https://www.ams.usda.gov/selling-food/product-specs.
Macaroni products, flour types, shapes, cheese sauce colors, cheese mix compositions, cheese flavors, preparation methods, fat contents, sodium contents, package types, and agricultural practices.\(^2\)

**Macaroni product I** - Enriched macaroni products (21 Code of Federal Regulations (CFR) §139.115)

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

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

**Flour type A** - Semolina

**Flour type B** - Durum flour

**Flour type C** - Farina

**Flour type D** - Flour, all purpose

**Flour type E** - Combination of two or more of flour types specified above\((as \text{ specified by the purchaser})\)

**Flour type F** - Other \((as \text{ specified by the purchaser})\)

**Shape 1** - Elbow

**Shape 2** - Spiral

**Shape 3** - Shell

**Shape 4** - Novelty shapes \((as \text{ specified by the purchaser})\)

**Shape 5** - Other \((as \text{ specified by the purchaser})\)

**Cheese sauce color a** - Colored (yellow)

**Cheese sauce color b** - Uncolored (white)

**Cheese mix composition (1)** - Dry

**Cheese mix composition (2)** - Creamy, ready-to-use, or liquid cheese

**Cheese flavor (a)** - Cheddar

**Cheese flavor (b)** - Cheddar with additional non-cheese ingredients \((as \text{ specified by the purchaser})\)

**Cheese flavor (c)** - Combination of cheeses \((as \text{ specified by the purchaser})\)

**Cheese flavor (d)** - Other \((as \text{ specified by the purchaser})\)

**Sauce preparation method (i)** - Prepared with the addition of water

**Sauce preparation method (ii)** - Prepared with the addition of water or milk, and butter/margarine

**Sauce preparation method (iii)** - Ready-to-use

**Sauce preparation method (iv)** - Other \((as \text{ specified by the purchaser})\)

\(^2\) Not all options are available from every manufacturer. Check with the manufacturer/distributor for availability.
Fat content (aa) - Less than 6 grams (g) per 25.8 g (1/4 cup (c)) of dry mix (reduced fat cheeses must comply with all applicable regulations of 21 CFR Part 133, 21 CFR §101.62(b) for nutrient content claims for fat, and 21 CFR §130.10 for foods named by use of a nutrient content claim and a standardized term)

Fat content (bb) - 6.1 g to 10 g per 25.8 g (1/4 c) of dry mix

Fat content (cc) - Other (as specified by the purchaser)

Sodium content 1] - Less than 900 milligrams (mg) per 25.8 g (1/4 c) of dry mix
Sodium content 2] - 901 mg to 1100 mg per 25.8 g (1/4 c) of dry mix
Sodium content 3] - Other (as specified by the purchaser)

Package type a] - Individual serving cup
Package type b] - Individual serving pouch
Package type c] - Multiple serving box
Package type d] - Multiple serving #10 can
Package type e] - Other (as specified by the purchaser)

Agricultural practice [1] - Conventional

4. MANUFACTURER’S/DISTRIBUTOR’S NOTES. Manufacturer’s/distributor’s products must meet the requirements of the:

- Processing guidelines (Sec. 5).
- Salient characteristics (Sec. 6).
- Analytical requirements: as specified by the purchaser (Sec. 7).
- Manufacturer’s/distributor’s product assurance (Sec. 8).
- Regulatory requirements (Sec. 9).
- Quality assurance provisions: as specified by the purchaser (Sec. 10).
- Packaging requirements other than commercial: as specified by the purchaser (Sec. 11).

5. PROCESSING GUIDELINES.

5.1 Processing. The macaroni and cheese mix must be processed in accordance with Current Good Manufacturing Practice (CGMP) (21 CFR Part 110) or the Current Good Manufacturing Practice, Hazard Analysis and Risk-Based Preventive Controls for Human Food (21 CFR Part 117) in effect on the date of the solicitation, contract, or purchase order, and as applicable to the production facility.

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3 Product weight depends on the macaroni product shape and the cheese mix composition.
5.2 **Food defense.** The macaroni and cheese mix must be processed and transported in accordance with 21 CFR Part 121, *Mitigation Strategies to Protect Food Against Intentional Adulteration.* This document identifies the kinds of preventive measures food manufacturers, processors, or handlers may take to minimize the risk that food under their control will be subject to tampering or other malicious, criminal, or terrorist actions. The implementation of enhanced food defense preventive measures provides for the security of a plant’s production processes and includes the storage and transportation of pre-production raw materials, other ingredients, and post-production finished product.

5.3 **Organic ingredients.** When organic macaroni and cheese mix is specified in the solicitation, contract, or purchase order, the organic macaroni and cheese mix must be produced, handled, and labeled in accordance with the USDA organic regulations by an operation that is certified organic in accordance with the requirements of the National Organic Program (7 CFR Part 205). A Certificate of Organic Production or Handling must be provided to verify that the product was processed and handled in accordance with the USDA organic regulations.

5.4 **Age requirement.** Unless otherwise specified in the solicitation, contract, or purchase order, the macaroni and cheese mix must be processed and packaged not more than 90 days prior to delivery to the purchaser.

5.5 **Shelf life.** After manufacture, the shelf life of the macaroni and cheese mix must be at least 15 months.

6. **SALIENT CHARACTERISTICS.**

6.1 **Labeling.** All ingredients must be declared by their common or usual name in descending order of predominance by weight (21 CFR §101.4(a)) unless exempted by 21 CFR §101.100.

6.2 **Ingredients.** The macaroni and cheese mix must consist of macaroni product, cheese sauce (either dry or prepared) with spices, and safe and suitable thickeners.

6.2.1 **Macaroni products.** The macaroni products must comply with the FDA Standards of Identity for: Macaroni Products (21 CFR §139.110), Enriched Macaroni Products (21 CFR §139.115), Enriched Macaroni Products with Fortified Protein (21 CFR §139.117). The macaroni products must have enough wall thickness to maintain its distinctive shape when prepared according to manufacturer’s directions. When specified by the purchaser in the solicitation, contract, or purchase order, the macaroni must be prepared from semolina.

6.2.2 **Cheese sauces.** The cheeses used in the cheese sauce must comply with the FDA Standard of Identity for Cheeses and Related Cheese Products (21 CFR Part 133) or as specified in the latest version of CID A-A-20208 Cheddar Cheese. Other ingredients common to cheese sauces, such as, not limited to annatto, paprika, beta carotene, and FD&C colors may be used.
When cheese flavor (2) is specified in the solicitation, contract, or purchase order, the purchaser will specify the non-cheese ingredients, i.e., garlic, bacon, etc.

6.2.2.1 Dehydrated cheese sauce. The dehydrated cheese sauce must contain Cheddar cheese (21 CFR §133.113) or as stated in CID A-A-20208, Cheddar Cheese Type II reduced fat cheese, thickeners, flavorings (natural and/or artificial), and appropriate spices, including salt. Other cheeses such as, but not limited to American cheese (21 CFR §§133.123, 133.124, 133.147, 133.169, and 133.173), blue cheese (21 CFR §133.106), granular and stirred curd cheese (21 CFR §133.144), Romano cheese (21 CFR §133.183), Swiss and emmentaler cheese (21 CFR §133.195), and cold-pack and club cheese (21 CFR §133.123) may be used.

6.2.2.2 Prepared cheese sauce. When specified in the solicitation, contract, or purchase order, the prepared cheese sauce must be shelf stable. The prepared cheese sauce must contain Cheddar cheese (21 CFR §133.113) or as stated in CID A-A-20208, Cheddar Cheese Type II reduced fat cheese, thickeners, flavorings (natural and/or artificial), and appropriate spices, including salt. Other cheeses such as, but not limited to American cheese (21 CFR §§133.123, 133.124, 133.147, 133.169, and 133.173), blue cheese (21 CFR §133.106), granular and stirred curd cheese (21 CFR §133.144), Romano cheese (21 CFR §133.183), Swiss and emmentaler cheese (21 CFR §133.195), and cold-pack and club cheese (21 CFR §133.123) may be used.

6.2.3 Additional processing ingredients. When used, all additional ingredients must meet the standards specified in the Food Chemicals Codex (FCC) or, in the absence of FCC specification at a minimum, meet the specifications for quality set by the U.S. Pharmacopeia (USP)-National Formulary quality. The additional ingredients must be approved for those particular uses by FDA’s regulations on food additives (21 CFR Part 170) or Direct Food Substances Affirmed as Generally Recognized as Safe (GRAS) requirements (21 CFR Part 184).

6.3 Prepared product.

6.3.1 Appearance. When the macaroni and cheese is prepared according to the manufacturer’s directions, the macaroni and cheese must be well blended. The overall appearance must not be mushy, pasty, lumpy, or thin. The cheese sauce must have the appropriate color for the type of cheese sauce specified in the solicitation, contract, or purchase order. There will be no foreign color to the product.

6.3.2 Aroma and flavor. The macaroni and cheese must have an aroma and flavor characteristic of the prepared macaroni and cheese specified in the solicitation, contract, or purchase order.

6.3.3 Texture. The texture of the cooked macaroni must not be rubbery, mushy, or pasty. The prepared cheese sauce consistency must be smooth, moderately thick, without lumps.
6.4 Foreign material. The flour components used to produce the macaroni products in the macaroni and cheese mix that have Defect Action Levels must not exceed those tolerances specified in 21 CFR §110.110. All other ingredients must be clean, sound, wholesome, and free from foreign material, such as, but not limited to, extraneous plant material, dirt, plastic, insects, insect pieces or rodent or insect infestation.

7. ANALYTICAL REQUIREMENTS.

7.1 Analytical and physical requirements. Unless otherwise specified in the solicitation, contract or purchase order, the following analytical and physical requirements for the macaroni and cheese must conform to those in Table I.

7.2 Analytical verification. Purchaser must specify manufacturer’s/distributor’s certification (Sec. 10.3) or USDA certification (Sec. 10.4).

7.3 USDA verification procedures. When USDA certification (Sec. 10.4) is specified in the solicitation, contract, or purchase order, analytical testing must be performed as follows.

7.3.1 Product verification sampling. When USDA verification of analytical requirements is specified in the solicitation, contract, or purchase order, analytical testing must be performed on subsamples of packages randomly selected from the lot. The number of subsamples must be based on USDA inspection service sampling procedures and plans (7 CFR §52.38). The contents of each will be used to create a composite sample that will be used in the analytical testing.

7.3.2 Analytical testing and reporting. When specified in the solicitation, contract, or purchase order, the analyses must be made in accordance with the following methods from the AOAC International Official Methods of Analysis (OMA) or as specified in Table I. Any result not conforming to the analytical requirements may be cause for rejection of the lot.
<table>
<thead>
<tr>
<th>Test</th>
<th>Requirement</th>
<th>Method</th>
<th>Reported as</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture of uncooked macaroni</td>
<td>Less than 13.0 percent for the dry macaroni</td>
<td>926.07 or 985.14</td>
<td>Nearest 0.1 percent</td>
</tr>
<tr>
<td>Monosodium glutamate</td>
<td>Less than 1.0 percent per 227 g (8 ounces (oz)) of prepared product</td>
<td>970.37</td>
<td>Nearest 0.1 g per 227 g (8 oz)</td>
</tr>
<tr>
<td>Fat content of the dry cheese powder</td>
<td>Not to exceed the limit specified by the purchaser</td>
<td>925.12</td>
<td>Nearest 0.01 g per 25.8 g (1/4 c)</td>
</tr>
<tr>
<td>Sodium content of the dry cheese powder</td>
<td>Not to exceed the limit specified by the purchaser</td>
<td>969.23, 985.35, or 2011.14</td>
<td>Nearest 0.01 g per 25.8 g (1/4 c)</td>
</tr>
<tr>
<td>Viscosity (as prepared)</td>
<td>4.5 to 7.5 centimeters (cm) in 30 seconds at 71.1°C (160°F)</td>
<td>Bostwick Consistometer</td>
<td>Nearest 0.1 cm</td>
</tr>
<tr>
<td>Coagulase positive <em>Staphylococcus aureus</em></td>
<td>Not more than 100 per g</td>
<td>975.55, 2003.07, or Direct Plate Count(^5)</td>
<td>Nearest g</td>
</tr>
<tr>
<td><em>Salmonella</em></td>
<td>Negative</td>
<td>967.26, 986.35, 2003.09, 2004.03, or Section C-7(^6)</td>
<td>Positive or negative</td>
</tr>
</tbody>
</table>

\(^4\) Dry ashing and flame emission procedures are to be used.

\(^5\) Chapter 12, 8th Edition, FDA Bacteriological Analytical Manual (BAM or the FDA BAM Online.

\(^6\) Chapter 5, 8th Edition, FDA BAM or the FDA BAM Online.
8. MANUFACTURER’S/DISTRIBUTOR’S PRODUCT ASSURANCE. The manufacturer/distributor must certify that the macaroni and cheese mix provided meets the salient characteristics of this CID, conform to their own specifications, standards, and quality assurance practices, and be the same macaroni and cheese mix offered for sale in the commercial market. The purchaser reserves the right to require proof of conformance.

9. REGULATORY REQUIREMENTS. The delivered macaroni and cheese mix must comply with all applicable Federal, State, and local mandatory requirements and regulations relating to the preparation, packaging, labeling, storage, distribution, and sale of the macaroni and cheese mix in the commercial marketplace. Delivered macaroni and cheese mix must comply with all applicable provisions of the Federal Food, Drug, and Cosmetic (FD&C) Act, the Fair Packaging and Labeling Act, and regulations promulgated thereunder. When a known allergen is included in the macaroni and cheese mix, the macaroni and cheese mix must comply with the allergen labeling requirements of the FD&C Act. Major allergens identified in the FD&C Act include wheat, fish, milk, soy, tree nuts, eggs, peanuts, and shellfish or those in effect on the date of the solicitation, contract, or purchase order. When the macaroni and cheese mix is used for the Child Nutrition (CN) Programs, the macaroni and cheese mix must comply with all applicable provisions of those programs. When a CN label is specified, the label must be approved in its final format by the Agricultural Marketing Service (AMS).

10. QUALITY ASSURANCE PROVISIONS. Purchaser must specify 10.3, or 10.4. Purchaser may specify one of the following combinations: 10.1.1 with 10.2.1, or 10.1.2 with 10.2.2.

10.1 Food defense. When required in the solicitation, contract, or purchase order, a Food Defense Systems Survey (FDSS) must be conducted by USDA, AMS, Specialty Crops Program (SCP), Specialty Crops Inspection (SCI) Division. Food defense requirements include a documented and operational food defense plan that provides for the security of a plant’s production processes and includes the storage and transportation of pre-production raw materials and other ingredients and post-production finished product. The plan must address the following areas: (1) food security plan management; (2) outside and inside security of the production and storage facilities; (3) slaughter, when applicable, and processing, including all raw material sources; (4) shipping and receiving; (5) storage; (6) water and ice supply; (7) mail handling; (8) personnel security; and (9) transportation, shipping, and receiving.

10.1.1 FDSS. When required in the solicitation, contract, or purchase order, a FDSS must be conducted by USDA, AMS, SCP, SCI Division. The FDSS verifies that operators of food establishments have implemented measures to minimize the risk of tampering or other criminal actions against the food under their control. An AMS FDSS verifies the participating company’s adherence to the Mitigation Strategies to Protect Food Against Intentional Adulteration (21 CFR Part 121).
10.1.2 Food defense section of the Plant Systems Audit (PSA). When required in the solicitation, contract, or purchase order, a food defense audit will be conducted as part of the PSA. The audit will be conducted by USDA, AMS, SCP, SCI Division auditors. This verifies that operators of food establishments have implemented measures to minimize the risk of tampering or other criminal actions against the food under their control. The food defense section of the PSA verifies the participating company’s adherence to the Mitigation Strategies to Protect Food Against Intentional Adulteration (21 CFR Part 121).

10.2 Manufacturer’s quality assurance. When required in the solicitation, contract, or purchase order, the product manufacturer will 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 the awarding of the contract. Failure to provide this documentation within the proper time frame may result in the contract being terminated for cause.

10.2.1 Plant survey. A plant survey conducted by USDA, AMS, or other survey performed by a third-party auditing service is required within 12 months prior to the date of the awarding of the contract. The plant survey audit verifies that, at the time of the survey, the manufacturer produces products in a clean, sanitary environment in accordance with CGMP (21 CFR Part 110) or the Current Good Manufacturing Practice, Hazard Analysis and Risk-Based Preventive Controls for Human Food (21 CFR Part 117) in effect on the date of the solicitation, contract, or purchase order, and as applicable to the production facility.

10.2.2 PSA. A PSA conducted by USDA, AMS, or other audit performed by a third-party auditing service is required within 12 months prior to the date of the awarding of the contract. The PSA verifies the manufacturer's capability to produce products in a clean, sanitary environment in accordance with CGMP (21 CFR Part 110) or the Current Good Manufacturing Practice, Hazard Analysis and Risk-Based Preventive Controls for Human Food (21 CFR Part 117) in effect on the date of the solicitation, contract, or purchase order, and as applicable to the production facility, and verifies that the manufacturer has in place an internal quality assurance program.

10.3 Manufacturer’s/distributor’s certification. When required in the solicitation, contract, or purchase order, the manufacturer/distributor must certify that the macaroni and cheese mix delivered meets or exceeds the requirements of this CID. The manufacturer/distributor must certify via a Certificate of Conformance or other adequate documentation (as specified by the purchaser) that the macaroni and cheese mix meets the analytical requirements specified in Sec. 7 of this CID.

10.4 USDA certification. When required in the solicitation, contract, or purchase order that product quality and acceptability or both be determined, the USDA, AMS, SCP, SCI Division inspectors, must be the certifying program. SCI Division inspectors must certify the quality and acceptability of the macaroni and cheese mix in accordance with SCI Division procedures, which
include selecting random samples of the macaroni and cheese mix, evaluating the samples for conformance with the salient characteristics and analytical requirements of this CID and other contractual requirements, and documenting the findings on official SCI Division score sheets and/or certificates. In addition, when required in the solicitation, contract, or purchase order, SCI Division inspectors will examine the macaroni and cheese mix for conformance to the U.S. Standards for Condition of Food Containers (7 CFR Part 42) in effect on the date of the solicitation.

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

12. USDA INSPECTION NOTES. When Sec. 10.4 is specified in the solicitation, contract, or purchase order, USDA certification must include evaluation of the quality and condition of samples of macaroni and cheese mix and compliance with requirements in the following areas:

- Processing guidelines (Sec. 5).
- Salient characteristics (Sec. 6).
- Analytical requirements when specified in the solicitation, contract, or purchase order (Sec. 7). When USDA analytical testing is specified, SCI Division inspection personnel must select samples and submit them to the USDA, AMS, Science and Technology Program (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 services.

13.1.1 USDA certification. For USDA certification contact: Associate Director, Inspection Operations, SCI Division, SCP, AMS, USDA, Room 1536 South Building, STOP 0240, 1400 Independence Avenue, SW, Washington, DC 20250-0240, telephone (202) 720-2482, fax (202) 720-0393, or via E-mail: Nathaniel.Taylor@usda.gov.

13.1.2 USDA FDSS, plant survey, and PSA. For a USDA FDSS, plant survey, and PSA contact the Chief, Auditing Services Branch, SCI Division, SCP, AMS, USDA, Room 0711 South Building, STOP 0247, 1400 Independence Avenue, SW, Washington, DC 20250-0247, telephone (202) 720-5021, fax (866) 230-9168, or via E-mail: SCAudits@usda.gov.

13.1.3 Analytical testing and technical information. For USDA technical information on analytical testing, contact the Laboratory Approval and Testing Division, S&TP, AMS,
USDA, STOP 0272, 1400 Independence Avenue, SW, Washington, DC 20250-0272, telephone (202) 690-4089 or via E-mail: KerryR.Smith@usda.gov.

13.2 Sources of documents.

13.2.1 Sources of information for nongovernmental documents are as follows:


Copies of the Food Chemicals Codex and U.S. Pharmacopeia may be purchased from: United States Pharmacopeia Convention, 12601 Twinbrook Parkway, Rockville, MD 20877, telephone (800) 227-8772 or (301) 881-0666, Fax (301) 816-8148 or on the Internet at: http://www.usp.org.

13.2.2 Sources of information for governmental documents are as follows:

Applicable provisions of the U.S. Standards for Condition of Food Containers are contained in 7 CFR Part 42, the National Organic Program are contained in 7 CFR Part 205, the Fair Packaging and Labeling Act are contained in 16 CFR Parts 500 to 503, and 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 979050, St. Louis, MO 63197-9000. 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. These documents may also be obtained free of charge on the Internet at: http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR.


CIVIL AGENCY COORDINATING ACTIVITY:

DOJ - BOP
HHS - FDA
USDA - SCP
VA - OSS
PREPARING ACTIVITY:

USDA - SCP

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