



**United States
Department of
Agriculture**

Agricultural
Marketing
Service

Fruit and
Vegetable
Division

Processed
Products
Branch

United States Standards for Grades of Frozen French Fried Potatoes

Effective February 8, 1967

This is the third issue of the United States Standards for Grades of Frozen French Fried Potatoes. These standards are issued by the Department after careful consideration of all data and views submitted.

These standards were first published in the Federal Register of April 22, 1966 (31 FR 9190), to become effective July 1, 1966. They were amended as published in the Federal Register of January 24, 1967 (32 FR 779), effective February 8, 1967.

Issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality, the grade standards are for the voluntary use of producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designated to facilitate orderly marketing by providing a convenient basis for establishing quality control programs, and for determining loan values.

These standards will also serve as a basis for the inspection and grading of this commodity Federal inspection service, which is also provided under the Agricultural Marketing Act of 1946. This service, available for inspection and grading of other processed products as well, is offered to interested parties, upon application, on a fee-for-service basis.

These standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards obtained from:

Chief, Processed Products Branch
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UNITED STATES STANDARDS FOR GRADES OF

FROZEN FRENCH FRIED POTATOES

EFFECTIVE FEBRUARY 8, 1967

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Authority: The provisions of this subpart issued under Sec. 205, 60 Stat. 1090, as amended; 7 U.S.C. 1624.	

Note: Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable State laws and regulations.

§52.2391 Product description.

Frozen french fried potatoes are prepared from mature, sound, white or Irish potatoes (*Solanum tuberosum*). The potatoes are washed, sorted, and trimmed as necessary to assure a clean and wholesome product. The potatoes may or may not be cut into pieces. The potatoes are processed in accordance with good commercial practice which includes deep frying or blanching in a suitable fat or oil and which may include the addition of any ingredient permissible under the Federal Food, Drug, and Cosmetic Act. The prepared product is frozen and is stored at temperatures necessary for its preservation.

§52.2392 Fry color type.

- (a) General: The term **fry color**, as used in this subpart, refers to the color change which occurs in the potato units solely because of the frying process. Potato units may be designated as to **fry color** in accordance with USDA color standards for frozen french fried potatoes. (See §52.2398 for further reference to these color standards.)
- (b) The **fry color** of a sample unit may be designated in accordance with the following criterion:

Designation	Fry color of the units
Extra light	Lighter than USDA No. 1
Light	Similar to USDA No. 1 color
Medium light	Mostly similar to USDA No.2. Predominantly lighter than No.3 but may include No. 1.
Medium	Mostly similar to USDA No.3. May include units of No. 4 and/or No. 2 fry color.
Dark	Predominantly darker than USDA No. 3. May include color No. 4 or darker.

§52.2392a Types.

- (a) Frozen french fried potatoes are of two types, based principally on intended use, as follows:
- (1) **Retail type.** This type is intended for household consumption. It is normally packed in small packages which are labeled or marked for retail sales. It may be otherwise designated for such use.

- (2) **Institutional type.** This type is intended for the hotel, restaurant, or other large feeding establishment trade. Primary containers, usually 5 pounds or more, are often not completely labeled as for retail sales.
- (b) If it is not possible to ascertain the type, the quality requirements of the retail type apply.

§52.2393 Styles.

- (a) **General.** The style of frozen french fried potatoes is identified by the general size, shape, or other physical characteristics of the potato units. Styles with cut units may be further identified by substyles as follows:
 - (1) Straight cut refers to smooth cut surfaces; and
 - (2) Crinkle cut refers to corrugated cut surfaces.
- (b) **Strips.** This style consists of elongated pieces of potato with practically parallel sides and of any cross-sectional shape. This style may be further identified by the approximate dimensions of the cross-section, for example:

1/4 x 1/4 inch,
3/8 x 3/8 inch,
1/2 x 1/4 inch, or
3/8 x 3/4 inch.

 - (1) Shoestring refers to strip, either straight cut or crinkle cut, with a cross-sectional area predominantly less than that of a square measuring 3/8 x 3/8 inch.
- (c) **Slices.** This style consists of pieces of potato with two practically parallel sides, and which otherwise conform generally to the shape of the potato. This style may also contain a normal amount of outside slices.
- (d) **Dices.** This style consists of pieces of potato cut into approximate cubes.
- (e) **Rissolé.** This style consists of whole or nearly whole potatoes.
- (f) **Other.** Any other individually frozen french fried potato product may be designated as to style by description of the size, shape, or other characteristic which differentiates it from the other styles.

§52.2394 Length designations.

- (a) General.** The length designations described in this section apply to **strip** styles only.
- (b) Criteria for length designations of a sample unit.** Frozen french fried potato strips are designated as to length in accordance with the following criteria. **Percent**, as used in this section, means the percent, by count, of all strips of potato that are 1/2-inch in length, or longer.

 - (1) Extra long.** Eighty (80) percent or more are 2 inches in length or longer; and 30 percent or more are 3 inches in length or longer.
 - (2) Long.** Seventy (70) percent or more are 2 inches in length, or longer; and 15 percent or more are 3 inches in length or longer.
 - (3) Medium.** Fifty (50) percent or more are 2 inches in length or longer.
 - (4) Short.** Less than 50 percent are 2 inches in length or longer.
- (c)** Criteria for length designation of a lot. (See §52.2403 for these criteria.)

§52.2395 Grades.

- (a) U.S. Grade A (or U.S. Fancy)** is the quality of frozen french fried potatoes, except **strip** style, **short** length, that:

 - (1)** have a good flavor;
 - (2)** have a good color;
 - (3)** are practically uniform in size and symmetry;
 - (4)** are practically free from defects;
 - (5)** possess a good texture; and
 - (6)** score not less than 90 points when scored in accordance with the scoring system outline in this subpart.
- (b) U.S. grade A (or U.S. Fancy) Short** is the quality of frozen french fried potatoes of **strip** style, **short** length that:

 - (1)** have a good flavor;

- (2) have a good color;
 - (3) are practically uniform in size and symmetry;
 - (4) are practically free from defects;
 - (5) possess a good texture; and
 - (6) score not less than 90 points when scored in accordance with the scoring system outline in this subpart.
- (c) **U.S. Grade B (or U.S. Extra Standard)** is the quality of frozen french fried potatoes that:
- (1) have a reasonably good flavor;
 - (2) have a reasonably good color;
 - (3) are reasonably uniform in size and symmetry;
 - (4) are reasonably free from defects;
 - (5) possess a reasonably good texture; and
 - (6) score not less than 80 points when scored in accordance with the scoring system outline in this subpart.
- (d) **Substandard** is the grade of frozen french fried potatoes that fail to meet the requirements of **U.S. Grade B**.

§52.2396 Ascertaining the grade of a sample unit.

- (a) **General.** The grade of a sample unit of frozen french fried potatoes is ascertained by considering: the factor of flavor which is not scored; the ratings for the factors of color, uniformity of size and symmetry, defects, and texture which are scored; the total score; and the limiting rules which may be applicable.
- (b) **Sample unit size.** For purposes of rating the quality factors, sample units are established as follows:
- (1) **Retail type.** One pound of product (16 ounces) selected from a production line or from one or more market packages.
 - (2) **Institutional type.** Two pounds of product (32 ounces) selected from

a production line or from one market package.

(c) Definitions of flavor.

- (1) Good flavor** means the good characteristic flavor and odor of properly prepared french fried potatoes. Such flavor is free from rancidity and bitterness, from pronounced scorched or caramelized flavors, and from off-flavors and off-odors of any kind.
- (2) Reasonably good flavor** means a flavor that may be somewhat lacking in good flavor and odor but is free from objectionable flavors and objectionable odors of any kind.

(d) Heating the product. When heating is required in connection with evaluating the quality factors, the sample unit is heated in accordance with the manufacturer's directions or in a manner that will give equivalent results. In the absence of such directions the following methods are prescribed:

- (1) Oven method.** This method is used for products packaged, labeled, marked, or otherwise designated to indicate probable retail sales for household use.
 - (i)** Place the product while still in the frozen state on a piece of crumpled and partially straightened aluminum foil of sufficient size so that at least 9 ounces of the product may be spread in a single layer on the foil. The aluminum foil may be supported by a piece of sheet metal or a shallow pan.
 - (ii)** Place foil and frozen contents into a properly ventilated oven preheated to 425 °F and allow to remain 15 minutes or until the interior portions of the larger pieces are properly cooked.
- (2) Deep fat method.** This method is used for products which are prepared, packaged, labeled, or marked to indicate probable hotel, restaurant, or other feeding establishment use. Place the product in a suitable basket or rack and cook, by immersing in clean suitable fat or oil at a temperature of about 365° F for 1-1/2 minutes or until the larger pieces are properly cooked.

(e) Factors rated by score points. The relative importance of each scoring factor is expressed numerically on the scale of 100. The maximum number of points that may be given each factor is:

Factors	Points
Color	30
Uniformity of size and symmetry	20
Defects	20
Texture	<u>30</u>
Total	100

§52.2397 Ascertaining the rating for the factors which are scored.

The essential variations within each factor which is scored are so described that the value may be ascertained for each factor and expressed numerically. The numerical range within each factor which is scored is inclusive. (For example: **18 to 20 points** means 18, 19, or 20 points.)

§52.2398 Color.

(a) **General.** The color of the product is evaluated before complete defrosting but after any exterior frost has evaporated. After heating, adjustment in the scores may be made to reflect color variations due to heating. The color numbers refer to a color which is visually similar to the designated color in the USDA Color Standards for Frozen French Fried Potatoes. The Fry Color designations in this section are the same as those described in §52.2392 *Fry color type*.

(b) **Availability of color standards.** The USDA Color Standard for frozen french fried potatoes cited in this sub-part are official color standards which may be used also to classify the fry color of other cooked products. Information about these color standards, and their availability, may be obtained from:

Chief, Processed Products Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
P.O. Box 96456, Rm. 0709, So. Bldg.
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(c) **"A" classification.** Frozen french fried potatoes that have a good color may be given a score of 27 to 30 points. **Good color** means the bright, characteristic color of properly prepared frozen french fried potatoes. The fry color may be **Extra light**, **Light**, **Medium light**, or **Medium** within the uniformity criterion in §52.2392. After heating, the product is practically free from units which vary markedly from the criterion for the fry color of the units.

- (d) **"B" classification.** If the frozen french fried potatoes have a reasonably good color, a score of 24 to 26 points may be given. Frozen french fried potatoes that fall into this classification may not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). **Reasonably good color** means a characteristic frozen french fry potato color which may be dull but not off color. The fry color may be variable, exceeding the uniformity criterion of **Extra light, Medium light, Medium** or **Dark**. After heating, however, the variation in the fry color of the units does not seriously affect the appearance of the product.
- (e) **"SStd" classification.** Frozen french fried potatoes that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 23 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.2399 Uniformity of size and symmetry.

- (a) **General.** In strip styles, the uniformity of length of normal shaped strips is not considered under this section. Such variation is considered under §52.2394. The following definitions apply to the specified styles:
- (b) **Definitions:**
- (1) **Chip.** In all styles except **Dices**, **chip** means a piece of potato that is less than one-half inch in its greatest direct dimension. A chip in **Dices** style is any piece of potato that is less than one half the volume of a normal dice. Chips are not considered small pieces for the purposes of this section.
- (2) **Small piece.** A **small piece** in strip styles, means a strip that is less than 1 inch in length.
- (3) **Sliver.** A **sliver** in strip styles is a strip of substantially smaller average cross-section than the predominant size of the strips and which has less than one-third of the weight of an average unit of the same length.
- (4) **Irregular pieces.** Irregular pieces, in all styles, means pieces of potato that do not have the general conformation of the other units of the product.
- (c) **"A" classification.** Frozen french fried potatoes that are practically uniform in size and symmetry may be given a score of 18 to 20 points. **Practically uniform in size and symmetry** has the following meanings for the styles

specified:

(1) Strip styles.

- (i)** Any chips present no more than slightly detract from the appearance of the product; and
- (ii)** of all the product units, except chips, not more than 15 percent, by count, may consist of small pieces, slivers, and/or irregular pieces.

(2) All styles except strips. Any chips present and/or any variation in the size and shape of the potato units may no more than slightly detract from the appearance of the product.

(d) "B" classification. If the frozen french fried potatoes are only reasonably uniform in size and symmetry a score of 16 or 17 points may be given. Frozen french fried potatoes that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is limiting rule). **Reasonably uniform in size and symmetry** has the following meanings for the styles specified:

(1) Strip styles.

- (i)** Any chips present may not seriously detract from the appearance of the product; and
- (ii)** Of all the product units, except **chips**, not more than 30 percent, by count, may consist of small pieces,slivers, and/or irregular pieces.

(2) All styles except strip. Any chips present and/or any variation in the size and shape of the potato units may not seriously detract from the appearance of the product.

(e) "SStd" classification. Frozen french fried potatoes that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.2400 Defects.

(a) General. This factor is concerned with imperfections in the product, such as necrosis, crushed units, discolored eyes, callous areas, and discolorations which affect its appearance or edibility.

- (b) **Insignificant imperfections.** Imperfections which individually are of little consequence are not considered as defects for the purposes of these standards. Their effect, however, on the overall appearance or edibility of the product is considered. Among such insignificant imperfections are:
- (1) Very light surface or internal discolorations of any size;
 - (2) Light brown surface or internal discolorations smaller in size than the area of a circle, or the volume of a sphere, of 3/16 inch diameter; and
 - (3) Dark brown surface or internal discolorations smaller in size than the area of a circle, or the volume of a sphere, of 1/8 inch diameter.
- (c) **Minor defects.** Minor defects are imperfections which detract, but not seriously so, from the appearance or edibility of the product. Among such imperfections are:
- (1) Light brown surface or internal discolorations equal to or larger in size than the area of a circle, or the volume of a sphere, of 3/16 inch diameter but smaller in size than the area of a circle, or the volume of a sphere, of 5/16 inch diameter; and
 - (2) Dark brown surface or internal discolorations equal to or larger in size than the area of a circle, or the volume of a sphere, of 1/8 inch diameter but smaller in size than the area of a circle, or the volume of a sphere of 1/4 inch diameter.
- (d) **Minor defective.** A minor defective is a unit of potato that is affected by one or more minor defects which detract, but not seriously so, from the appearance or edibility of the unit.
- (e) **Major defects.** Major defects are imperfections of such a nature as to seriously detract from the appearance or edibility of the product. Among such imperfections are:
- (1) light brown surface or internal discolorations equal to or larger in size than the area of a circle, or the volume of a sphere, of 5/16 inch diameter;
 - (2) dark brown surface or internal discolorations equal to or larger in size than the area of a circle, or the volume of a sphere, of 1/4 inch diameter; and

- (3) any condition of the potato which is offensive because of color, odor, character, or for any other reason.
- (f) **Major defective.** A major defective is a unit of potato that is affected by one or more major defects or by any combination of major and/or minor defects so as to detract seriously from the appearance or edibility of the unit.
- (g) **"A" classification.** Frozen french fried potatoes that are practically free from defects may be give a score of 18 to 20 points. **Practically free from defects** means that:
 - (1) any combination of defects present (including insignificant imperfections) may no more than slightly detract from the appearance or edibility of the product;
 - (2) any carbon specks present may no more than slightly detract from the appearance of the product; and
 - (3) the minor and major defectives that may be present in the sample unit, do not exceed the allowances in Table I or Table II of this subpart.
- (h) **"B" classification.** If the frozen french fried potatoes are reasonably free from defects a score of 16 or 17 points may be given. Frozen french fried potatoes that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting). **Reasonably free from defects** means that:
 - (1) any combination of defects present (including insignificant imperfection) does not seriously detract from the appearance or edibility of the product;
 - (2) any carbon specks present do not seriously detract from the appearance of the product; and
 - (3) the minor and major defectives that may be present in the sample unit do not exceed the allowances in Table I or Table II of this subpart.
- (i) **"SStd" classification".** Frozen french fried potatoes that fail to meet the requirements of paragraph (h) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

TABLE I

**MAXIMUM ALLOWANCES FOR DEFECTIVES IN ALL STYLES
EXCEPT SHOESTRING STYLE STRIPS AND DICES**

Grade classification	Type of defects	Retail type	Institutional type
		Defectives in a 1-lb sample unit	Defectives in a 2-lb sample unit
A and A short	Minor and major Limit for major	5 defectives 1 defectives	18 defectives 4 defectives
B	Minor and major Limit for major	9 defectives 2 defectives	28 defectives 8 defectives

TABLE II

**MAXIMUM ALLOWANCES FOR DEFECTIVES IN
SHOESTRING STYLE STRIPS AND DICES**

Grade classification	Type of defects	Retail type	Institutional type
		Defectives in a 1-lb sample unit	Defectives in a 2-lb sample unit
A and A short	Minor and major Limit for major	9 defectives 2 defectives	28 defectives 8 defectives
B	Minor and major Limit for major	18 defectives 5 defectives	36 defectives 12 defectives

§52.2401 Texture.

- (a) **General.** The factor of texture is evaluated within 3 minutes after the product has been heated as specified, and while it is well above room temperature.
- (b) **"A" classification.** Prepared french fried potatoes that possess a good texture may be given a score of 27 to 30 points. **Good texture** means that the external surfaces of the units moderately crisp, show no noticeable separation from the inner portion, and are not excessively oily; the interior portions are well cooked, tender, and practically free from sogginess; except that shoestring style strips and dices may be moderately crisp throughout.

- (c) **"B" classification.** If the prepared french fried potatoes possess only a reasonably good texture a score of 24 to 26 point may be given. Frozen french fried potatoes that fall into this classification shall not be graded above U.S. Grade B regardless of the total score for the product (this is a limiting rule). **Reasonably good texture** means that the external surfaces of the units may be slightly hard of slightly tough, show no more than a moderate separation from the interior portion, and are not excessively oily; the interior portions are well cooked, reasonably tender, and reasonably free from sogginess.
- (d) **"SStd" classification.** Frozen french fried potatoes that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 23 points and shall not be graded above Substandard regardless of the total score for the product (this is a limiting rule).

§52.2402 Ascertaining the grade of a lot.

The grade of a lot of frozen french fried potatoes covered by these standards is determined by the procedures set forth in the Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products (7 CFR 52.1 to 52.83).

§52.2403 Ascertaining the length designation of a lot.

- (a) This section applies to strip styles only.
- (b) A lot of frozen french fried potato strips may be given a single length designation when the sample units representing the lot comply with the plan outlined in paragraph (c) of this section, in that:
 - (1) Any number of sample units, indicated by "X" are of the designated length and/or longer length designation; and
 - (2) the number of sample units indicated by "D" does not exceed the acceptance number for the sample size in the sampling plan contained in this section.
- (c) Plan for ascertaining the length designation of a lot:

Length designation for the lot	Individual sample units of each designation permitted <u>1/</u>			
	Extra long	Long	Medium	Short
Extra long	X	D	None	None
Long	X	X	D	None
Medium	X	X	X	D
Short	D	X	X	X more than D

1/ Indicates limiting rule.

X means any number of sample units within the sample size.

D means the number of sample units indicated by the acceptance number for the sample size in the single sampling plan in this section.

X more than D means any number of sample units within the single sampling plan which is larger than the acceptance number for the sample size.

(d) Single sampling plan:

Sample size	6	13	21	29	38	48	60	72
Acceptance number	1	2	3	4	5	6	7	8

§52.2404 Equivalents.

The following approximate equivalents may be used in connection with the numerical values used in this subpart:

1 inch	=	25.4 mm
2 inch	=	50.8 mm
3 inch	=	76.2 mm
1/4 inch	=	6.4 mm
1/8 inch	=	3.2 mm
3/16 inch	=	4.8 mm
5/16 inch	=	7.9 mm
1 pound	=	0.45 kg
425° F	=	218° C
365° F	=	185° C

§52.2405 Score sheet for frozen french fried potatoes.

Size and kind of container			
Container mark of identification			
Label			
Net weight (ounces)			
Style and cross-sectional dimension			
Type			
Length			
Factors		Score points	
Color	30	"A"	27-30
		"A" short	27-30
		"B"	24-26 <u>1/</u>
		"SStd"	0-23 <u>1/</u>
Uniformity of size and symmetry . . .	20	"A"	18-20
		"A" short	18-20
		"B"	16-17 <u>1/</u>
		"SStd"	0-15 <u>1/</u>
Defects	20	"A"	18-20
		"A" short	18-20
		"B"	16-17 <u>1/</u>
		"SStd"	0-15 <u>1/</u>
Texture	30	"A"	27-30
		"A" short	27-30
		"B"	24-26 <u>1/</u>
		"SStd"	0-23 <u>1/</u>
Total score	100		
Flavor			
Grade			

1/ Indicates limiting rule.

Dated: February 8, 1967

/s/
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Deputy Administrator,
Marketing Services

Amended effective February 8, 1967.
Published in the Federal Register of April 22, 1966 (31 FR 9190)
Amended January 24, 1967 (32 FR 779).