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# **United States Standards for Grades of Canned Peas and Carrots**

**Effective January 20, 2017**

This issue of the United States Standards for Grades of Canned Peas and Carrots (81 FR 93572) supersedes the previous issue which has been in effect since July 20, 1970.

Voluntary U.S. grade standards are 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. These grade standards are available for use by producers, suppliers, buyers, and consumers. As in the case of other standards for grades of fresh and processed fruits, vegetables, and specialty crops these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

The U.S. grade standards and inspection instructions for all fresh and processed fruits, vegetables, and specialty crops are available on the internet and upon request at the address below. These documents provide detailed interpretations of the grade standards and provide step-by-step procedures for grading the product.

Grade standards are issued by the U.S. Department of Agriculture (USDA) after careful consideration of all data and views submitted during rulemaking. The Department welcomes suggestions for improving the standards in future revisions. Comments may be submitted to, and copies of standards and inspection instructions obtained from:

Director, Specialty Crops Inspection Division  
Specialty Crops Program,  
USDA, Agricultural Marketing Service  
1400 Independence Avenue, SW, STOP 0240  
Washington, D.C. 20250

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**Authority:** 7 U.S.C. 1621-1627.

**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.

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## United States Standards for Grades of Canned Peas and Carrots

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## **Product Description, Kinds, Styles, and Grades**

### **§52.6201 Product description.**

**Canned peas and carrots** is the product which has been properly prepared from clean, sound, succulent garden peas and clean, sound carrots. The peas and carrots are packed in a suitable packing medium with or without the addition of salt, sugar, or other ingredient(s) permissible under the Federal Food, Drug, and Cosmetic Act; and are sufficiently processed by heat to assure preservation of the product in hermetically sealed containers.

### **§52.6202 Kinds, styles, proportions of vegetables.**

- (a) **Peas.** Sweet type peas shall comprise not less than 50 percent, by weight, of the drained product.
- (b) **Carrots.** Not less than 25 percent, by weight, of the drained product shall be carrots and shall be one of the following styles:
  - (1) **Sliced.** Predominantly of parallel slices which may be in the form of “corrugated,” “fluted,” “wavy,” “scalloped,” or “crinkle cut”;
  - (2) **Diced.** Approximate cube-shaped;
  - (3) **Doubled-diced.** Approximate rectangular shaped which resemble the equivalent of two cube-shaped units; or
  - (4) **Strips.** Cut strips not exceeding three-eighth inch in width and of various lengths and which have four approximately parallel sides.
- (c) **Determination of proportion of ingredients.** The proportion requirement for the respective ingredient is determined by averaging the total drained weight of each ingredient in all 10-ounce sample units in the sample: *Provided*, That any deviation from the requirement for proportions of ingredients in any one 10-ounce sample unit is within the range of variability of good commercial practice.

### **§52.6203 Grades of canned peas and carrots**

- (a) **U.S. Grade A** is the quality of canned peas and carrots in which the vegetables possess a good color, are practically free from defects, possess a good character, possess a good flavor and odor, and which score not less than 90 points when scored in accordance with the scoring system outlined in this subpart.
- (b) **U.S. Grade B** is the quality of canned peas and carrots in which the vegetables have at least reasonably good color, reasonable freedom from defects, a reasonably good character, and fairly good flavor and odor, and which score not

less than 80 points when scored in accordance with the scoring system outlined in this subpart.

- (c) **Substandard** is the quality of canned peas and carrots that fail to meet the requirements of U.S. Grade B.

#### **Fill of Container and Drained Weight**

##### **§52.6204 Fill of containers and drained weights**

- (a) **General.** The recommended fill of container is not incorporated in the grades of the finished product since fill of container, as such, is not a factor of quality for the purpose of these grades. It is recommended that each container be as full of peas and carrots as practicable without impairment of quality and that the product and packing medium occupy not less than 90 percent of the volume of the container.
- (b) **Method for ascertaining drained weight.** The minimum drained weight recommendations in Table I are not incorporated in the grades of the finished product since drained weight, as such, is not a factor of quality for the purpose of these grades. The drained weight of canned peas and carrots is determined by emptying the contents of the container upon a U.S. Standard No. 8 circular sieve of proper diameter containing 8 meshes to the inch (0.0937 inch,  $\pm 3$  percent, square openings). The product is evenly distributed on the sieve; the sieve inclined slightly to facilitate drainage, and allowed to drain for 2 minutes. The drained weight is the weight of the sieve and the peas and carrots less the weight of the dry sieve. A sieve 8 inches in diameter is used for the No. 2-1/2 size can (401 x 411) and smaller sizes; and a sieve 12 inches in diameter is used for containers larger than the No. 2-1/2 size can.

##### **§52.6205 Compliance with recommended minimum drained weights.**

Compliance with the recommended minimum drained weights for canned peas and carrots is determined by averaging the drained weights from all the containers which are representative of a specific lot. Such lot is considered as meeting the recommendations if the following criteria are met:

- (a) The average of the drained weights from all of the containers meets the recommended drained weight; and
- (b) The drained weights from the containers which do not meet the recommended drained weight are within the range of variability for good commercial practice.

**Table I – Recommended Minimum Drained Weights of Peas and Carrots**

Container size or designation	If the style of the carrot is:	
	Sliced; strips	Diced; double-diced
	Ounces	Ounces
8 oz. Tall	5.5	5.5
No. 2 Vacuum (3-7/16 x 3-6/16)	9.5	9.5
No. 303	10.6	10.8
No. 303 (Glass)	10.6	10.8
No. 10	70.0	71.0

**Sample Unit Size and Factors of Quality**

**§52.6206 Sample unit size.**

Compliance with requirements for factors of quality and for proportions of ingredients shall be based on a sample unit consisting of 10 ounces of drained product. A sample unit may be comprised of:

- (a) The entire contents of a container;
- (b) A combination of the contents of two or more containers;
- (c) A representative portion of the contents of a container: *Provided*, That not more than one (1) sample unit is derived from any one single container smaller than a No. 10 can and that less than two (2) sample units are derived from any one single container of a No. 10 can size or larger.

**§52.6207 Ascertaining the grade of a sample unit.**

- (a) **General.** The grade of a sample unit of canned peas and carrots is ascertained by considering: The flavor and odor which are not scored; the rating of the factors of color, uniformity of size and shape, absence of defects, and character which are scored; the total score; and the limiting rules which may be applicable.
- (b) **Definition of flavor and odor.**
  - (1) **Good flavor** means that the product and each of the vegetables has a good, characteristic, normal flavor and odor.

(2) **Fairly good flavor** means that the product may be lacking in good flavor and odor but is free from objectionable flavors and objectionable odors of any kind.

(c) **Factor not rated by score points.**

(1) Flavor and odor.

(d) **Factors rated by score points.**

(1) The relative importance of each factor which is scored is expressed numerically on the scale of 100. The maximum number of points that may be given such factors are:

<b>Factors:</b>	<b>Points</b>
Color	20
Uniformity of size	20
Absence of defects	30
Character	30
Total score	100

**§52.6208 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).

**§52.6209 Color.**

(a) **General.** The factor of color refers to the overall appearance of the product and to the color and brightness of the vegetables individually.

(b) **“A” classification.** Canned peas and carrots which possess a good color may be given a score of 18 to 20 points.

**Good color** means that the product possesses an overall color that is at least reasonably bright and each of the vegetables is not more than slightly affected by variations in color; that the carrots possess an orange-yellow color which is bright and typical and the presence of green, white, or orange-brown units does not more than slightly affect the appearance or eating quality of the carrots; that the

color of the peas is normal and is typical of at least reasonably young and reasonably tender peas with practically no blond or cream colored peas.

- (c) **“B” classification.** Canned peas and carrots which possess a reasonably good color may be given a score of 16 or 17 points. Canned peas and carrots that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (limiting rule).

**Reasonably good color** means that the product possesses an overall color which may be slightly dull but is not off color; that the color of each of the vegetables may be variable but not to the extent that the appearance of the product is seriously affected; that the presence of green, white, or orange-brown units does not seriously affect the appearance of the carrots; that the color of the peas is typical of fairly young and fairly tender peas.

- (d) **“SStd” classification.** If the canned peas and carrots fail to meet the requirements of paragraph (c) of this section a score of 0 to 15 points may be given and the product shall not be graded above Substandard, regardless of the total score for the product (limiting rule).

#### **§52.6210 Uniformity of size and shape.**

- (a) **General.** Under this factor, consideration is given only to the uniformity of size and shape of the carrot ingredient. The percentage, by weight, of the carrot ingredient consisting of units smaller, or larger, than the required size for a particular style is determined by separating all such units from the other carrot units in the sample unit, weighing such units, and dividing that weight by the total weight of the drained carrot ingredient in the sample unit.
- (b) **Ascertaining dimensions.** Size dimensions of the various units are measured as follows:
- (1) **Diameter and thickness of sliced carrots.** The diameter of a slice is the measurement across the largest cut surface of the slice. The thickness of a slice is measured at the thickest portion between the two cut surfaces of the slice.
  - (2) **Size of diced carrots.** The size of a dice is the length of the edge (other than rounded outer edges) which is most representative of the size of the approximate cube.
  - (3) **Width of a strip.** The width of a strip is the widest cut surface measured at right angles to the length of the unit.
- (c) **“A” classification.** Canned peas and carrots that are practically uniform in size and shape may be given a score of 18 to 20 points.



**Practically uniform in size and shape** means that:

- (1) The carrots comply with the measurement, shape and uniformity requirements for “A” classification in Table II; and, in addition
  - (2) The overall appearance of the product is not materially affected by variations or irregularities in size and shape of the units.
- (d) **“B” classification.** Canned peas and carrots that are reasonably uniform in size and shape may be given a score of 16 or 17 points. Canned peas and carrots that fall into this classification shall not be graded above U.S. Grade B regardless of the total score for the product (limiting rule).

**Reasonably uniform in size and shape** means that:

- (1) The carrots comply with the measurement, shape, and uniformity requirements for “B” classification in Table II; and, in addition
  - (2) The overall appearance of the product is not seriously affected by variations or irregularities in size or shape of the units.
- (e) **“SStd” classification.** Canned peas and carrots 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 (limiting rule).

**Table II – Uniformity of Size and Shape Requirements for Carrot Ingredient in Canned Peas and Carrots**

Styles of carrots	Measurement and/or shape of individual units	(A)	(B)
		Classification maximum variation (percent by weight of carrot ingredient in the sample unit)	Classification maximum variation (percent by weight of carrot ingredient in the sample unit)
Sliced	1-1/2" maximum diameter; 3/8" maximum thickness.	15 percent may exceed these measurement limits.	25 percent may exceed these measurement limits.
Diced	Approximate cube shape, 3/8" minimum; 5/8" maximum.	20 percent may fail these measurement limits, provided small chips do not materially affect appearance of product.	30 percent may fail these measurement limits, provided small chips do not seriously affect appearance of product.
Double-Diced	Approximate double cube shapes.	20 percent may be noticeably smaller or larger than average size unit.	30 percent may be noticeably smaller or larger than average size unit.
Strips	Approximate French-cut shapes, 1-1/2" minimum length, 3/8" maximum width.	25 percent may be less than 1-1/2" in length or exceed 3/8" width.	35 percent may be less than 1-1/2" in length or exceed 3/8" width.

**§52.6211 Defects.**

(a) **General.** The factor of defects refers to the degree of freedom from harmless extraneous vegetable material, damaged units, seriously damaged units, and any other defect which detracts from the appearance or edibility of the product.

(1) **Harmless extraneous vegetable material** means:

- (i) Material common to the pea or carrot plant (such as leaves, stems, or pods) and
- (ii) Harmless material from other plants (such as thistle buds or seeds) which are succulent.

(2) **Damaged unit** means any pea or carrot unit that is affected by discoloration or other blemish to the extent that the appearance or edibility of the unit is materially affected and has the following specific meanings with respect to each vegetable:

- (i) **Peas.** Any spotted or off-colored pea (other than blond peas) such as brown or gray discoloration.
- (ii) **Carrots.** Any unit possessing an unpeeled area greater than the area of a circle one-eighth inch in diameter; and any unit blemished by internal or external discoloration, such as sunburn or green color, or other similar color.

(3) **Seriously damaged unit** means a pea or carrot unit that is damaged to the extent that the appearance or edibility of the unit is seriously affected and includes units with very dark spots or serious discoloration or other abnormalities.

(4) **Other defects** means defects not specifically mentioned that affect the appearance or edibility of the product and include, but are not limited to, the following:

- (i) **Peas.** Mashed peas, broken peas, loose cotyledons, loose skins, and any portions thereof;
- (ii) **Carrots.** Crushed, broken, or cracked units or units with excessively frayed edges and surfaces.

(b) **“A” classification.** Canned peas and carrots that are practically free from defects may be given a score of 27 to 30 points. Practically free from defects means that there may be present:

- (1) Not more than one (1) piece of harmless extraneous material per 60 ounces of drained product (average of entire sample); and
  - (2) Not more than the following per sample unit of 10 ounces:
    - (i) A total of 8 damaged and seriously damaged units of which not more than one (1) may be seriously damaged: *Provided*, That damaged and seriously damaged units, either singly or in combination, may no more than slightly affect the appearance or eating quality of the product;
    - (ii) Harmless extraneous material and/or other defects, individually or collectively, which materially affect the appearance of the product; and
    - (iii) Any combination of the foregoing which materially affect the appearance or eating quality of the product.
- (c) **“B” classification.** If the canned peas and carrots are reasonably free from defects, a score of 24 to 26 points may be given. Canned peas and carrots that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (limiting rule).

**Reasonably free from defects** means that there may be present:

- (1) Not more than one (1) piece of harmless extraneous material per 30 ounces of drained product (average of entire sample); and
- (2) Not more than the following per sample unit of 10 ounces:
  - (i) A total of 15 damaged and seriously damaged units of which not more than 3 units may be seriously damaged: *Provided*, That damaged and seriously damaged units, either singly or in combination, do not seriously affect the appearance or eating quality of the product;
  - (ii) Harmless extraneous material and/or other defects, individually or collectively, which seriously affect the appearance or eating quality; and
  - (iii) Any combination of the foregoing which seriously affect the appearance or eating quality of the product.

- (d) **“SStd” classification.** Canned peas and carrots 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 (limiting rule).

**§52.6212 Character.**

- (a) **General.** The factor of character refers to the tenderness and maturity of the peas; and the tenderness and degree of freedom from stringy or coarse fibers in the carrots.
- (b) **“A” classification.** Canned peas and carrots which possess a good character may be given a score of 27 to 30 points.

**Good character** means that:

- (1) **Carrots.** The carrot units are tender, are not fibrous, and possess a practically uniform texture.
- (2) **Peas.** The peas are at least reasonably tender and comply with the requirements of Table III.
- (c) **“B” classification.** If the canned peas and carrots possess a reasonably good character, a score of 24 to 26 points may be given. Canned peas and carrots that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (limiting rule).

**Reasonably good character** means that:

- (1) **Carrots.** The carrot units are at least reasonably tender, may be variable in texture but are not tough, hard, or mushy; and not more than 5 percent, by weight, of the carrot ingredient may possess coarse, fibrous material.
- (2) **Peas.** The peas are at least fairly tender; the skins of not more than 5 percent, by count, of the peas may be ruptured to a width of one-sixteenth inch or more; and, the peas comply with the requirements of Table III.

**Table III – Summary of Maximum Allowances for the Brine Flotation Test**

Grade	Score range	Maximum number of peas that sink in 10 seconds (percent by count)		
		13% salt solution	15% salt solution	16% salt solution
A	27 to 30	5	2	None
B	24 to 26	No limit	10	2

- (d) **“SStd” classification.** Canned peas and carrots 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 (limiting rule).

### Methods of Analyses

#### §52.6213 Methods of analyses.

**Brine flotation test.** The brine flotation test utilizes salt solutions of various specific gravities to separate the peas according to maturity. The brine solutions are based on the percentage, by weight, of pure salt (NaCl) in solution. In making the test, a 250 ml. glass beaker is filled with the brine solution to a depth of approximately 2 inches. The brine equipment, solution, and peas should be at the same temperature. Only peas that sink to the bottom of the receptacle within 10 seconds after immersion are counted “as peas that sink.” Pieces of peas and loose skins should not be used in making the brine flotation test.

### Lot Compliance

#### §52.6214 Ascertaining the grade of a lot.

The grade of a lot of canned peas and carrots 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 through 52.83)

**Score Sheet**

**§52.6215 Score sheet for canned peas and carrots.**

Number, size, and kind of container			
Container marks or identification			
Label			
Net weight (ounces)			
Vacuum (inches)			
Drained weight (ounces)			
Kinds of Ingredients	Per Sample Unit		
	Aggregate weight of each ingredient	Proportion of ingredients	
Peas, sweet	___ oz	___%	
Carrots:			
Diced (approx. "___" cubes)	___ oz	___%	
Double Diced	___ oz	___%	
Sliced (approx. "___" diameter)	___ oz	___%	
Strips	___ oz	___%	
Total weight of drained vegetables	___ oz	100%	
Factors		Grade	Score Points
Color	20	"A"	18-20
		"B"	16-17 <sup>1</sup>
		"SStd"	0-15 <sup>1</sup>
Uniformity of size and shape	20	"A"	18-20
		"B"	16-17 <sup>1</sup>
		"SStd"	0-15 <sup>1</sup>
Absence of defects	30	"A"	27-30
		"B"	24-26 <sup>1</sup>
		"SStd"	0-23 <sup>1</sup>
Character	30	"A"	27-30
		"B"	24-26 <sup>1</sup>
		"SStd"	0-23 <sup>1</sup>
Total Score		100	
Flavor: ( ) Good ( ) Fairly Good ( ) Off			
U.S. Grade			

<sup>1</sup>Indicates limiting rule.