



**United States
Department of
Agriculture**

**Agricultural
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Service**

**Fruit and
Vegetable
Division**

**Processed
Products
Branch**

United States Standards for Grades of Frozen Peas

Effective date May 28, 1959

This is the sixth issue of the United States Standards for Grades of Frozen Peas, published in the **FEDERAL REGISTER** of May 28, 1959 (24 FR 3782) to become effective May 28, 1959. This issue supersedes the fifth issue, which has been in effect since March 15, 1945.

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 processed fruits and vegetables, 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 standards also serve as a basis for the inspection and grading of commodities by the Federal inspection service, the only activity authorized to approve the designation of U.S. grades as referenced in the standards, as provided under the Agricultural Marketing Act of 1946. This service, available as on-line (in-plant) or lot inspection and grading of all processed fruit and vegetable products, is offered to interested parties, upon application, on a fee-for-service basis. The verification of some specific recommendations, requirements, or tolerances contained in the standards can be accomplished only by the use of on-line inspection procedures. In all instances, a grade can be assigned based on final product factors or characteristics.

In addition to the U.S. grade standards, grading manuals or instructions for inspection of several processed fruits and vegetables are available upon request for a nominal fee. These manuals or instructions contain detailed interpretations of the grade standards and provide step-by-step procedures for grading the product.

Grade 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 and grading manuals obtained from:

Chief, Processed Products Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
P.O. Box 96456, Rm. 0709, So. Bldg.
Washington, D.C. 20090-6456

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Authority:	Agricultural Marketing Act of 1946, Secs. 203, 205, 60 Stat. 1087, as amended, 1090, as amended (7 U.S.C. 1622, 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.

§52.3511 Product description.

Frozen peas means the frozen product prepared from the clean, sound, succulent seed of the common garden pea (*Pisum sativum*) by shelling, washing, blanching, sorting, proper draining, and is frozen in accordance with good commercial practice and maintained at temperatures necessary for the preservation of the product.

§52.3512 Grades of frozen peas.

- (a) **U.S. Grade A (or U.S. Fancy)** is the quality of frozen peas that possess similar varietal characteristics; that possess a good flavor; that possess a good color; that are practically free from defects; that are tender; and for those factors which are rated in accordance with the scoring system outlined in this subpart the total score is not less than 90 points: **Provided**, that the frozen peas may possess a reasonably good color, scoring not less than 17 points and may be only reasonably free from defects with respect to pieces of peas if the total score is not less than 90 points.
- (b) **U.S. Grade B (or U.S. Extra Standard)** is the quality of frozen peas that possess similar varietal characteristics; that possess a fairly good flavor; that possess a reasonably good color; that are reasonably free from defects; that are reasonably tender; and for those factors which are rated in accordance with the scoring system outlined in this subpart the total score is not less than 80 points: **Provided**, that the frozen peas may possess a fairly good color and may be fairly free from defects with respect to pieces of peas if the total score is not less than 80 points
- (c) **U.S. Grade C (or U.S. Standard)** is the quality of frozen peas that possess similar varietal characteristics; that possess a fairly good flavor; that possess a fairly good color; that are fairly free from defects; that are fairly tender; and that for those factors which are scored in accordance with the scoring system outlined in this subpart the total score is not less than 70 points: **Provided**, that the frozen peas may fail to meet the requirements of this paragraph for defects with respect to pieces of peas if the total score is not less than 70 points.
- (d) **Substandard** is the quality of frozen peas that fail to meet the requirements of U.S. Grade C.

§52.3513 Ascertaining the grade.

- (a) **General.** In addition to considering other requirements outlined in the standards the following quality factors are evaluated in ascertaining the grade of the product:

(1) Factors not rated by score points.

(i) Varietal characteristics.

(ii) Flavor.

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

Factors	Points
Color	20
Defects	40
Tenderness and maturity	<u>40</u>
Total score	100

(b) **Evaluation of quality.** Flavor and the factor of tenderness and maturity is determined after the product has reached room temperature and after cooking. The rating for the factors of color and defects and the evaluation of similar varietal characteristics are determined immediately after the product has reached room temperature or may be determined immediately after thawing so that the product is free from ice crystals.

(c) **Definitions of requirements not rated by score points.**

(1) **Good flavor** means that the product has a good characteristic flavor and odor for the maturity and is free from objectionable flavors and objectionable odors of any kind.

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

§52.3514 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, **36 to 40 points** means 36, 37, 38, 39, or 40 points.)

§52.3515 Color.

- (a) **"A" classification.** Frozen peas that possess a good color may be given a score of 18 to 20 points. **Good color** means that the frozen peas possess a bright, practically uniform, good, green color that is typical for the variety; that peas which vary markedly from such typical green color do not more than slightly affect the overall color appearance; and that not more than one-half of 1 percent, by count, of the peas may be blond, cream colored, or seriously detract from the overall color appearance.
- (b) **"B" classification.** If the frozen peas possess a reasonably good color, a score of 16 or 17 points may be given. Frozen peas that score 16 points in this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a partial limiting rule). **Reasonably good color** means that the frozen peas possess a reasonably bright and reasonably uniform green color typical for the variety; that peas which vary markedly from such typical green color do not materially affect the overall color appearance; and that not more than 1-1/2 percent, by count, of the peas may be blond, cream colored, or seriously detract from the overall color appearance.
- (c) **"C" classification.** Frozen peas that possess a fairly good color may be given a score of 14 or 15 points. Frozen peas 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 partial limiting rule). **Fairly good color** means that the frozen peas possess a fairly uniform green color typical for the variety, which may be dull but not off color; that peas which vary markedly from such typical green color do not seriously affect the overall color appearance; and that not more than 2 percent, by count, of all the peas may be blond, cream colored, or seriously detract from the overall color appearance.
- (d) **"SStd" classification.** Frozen peas that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 13 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.3516 Defects.

- (a) **General.** The factor of defects refers to the degree of freedom from harmless extraneous vegetable material, pieces of peas, blemished peas, seriously blemished peas, and other defects which affect the appearance or eating quality of the product.

(b) Definition of defects.

(1) Harmless extraneous vegetable material means:

- (i)** Group 1; flat material. Succulent vegetable material common to the pea plant, such as leaves and pea pods;
- (ii)** Group 2; spherical material. Non-deleterious or non-poisonous types of nightshade berries, thistle buds, or other similar spherical vegetable material from other plants similar in color to frozen peas.
- (iii)** Group 3; cylindrical material. Cylindrical vegetable material, such as stems, common to the pea plant or from other plants which are similar in color to frozen peas.

(2) Pieces of pea (broken pea) means:

- (i)** A whole pea from which a cotyledon or a large portion thereof has become separated;
- (ii)** Two detached whole cotyledons;
- (iii)** Pieces of cotyledon aggregating the equivalent of an average size cotyledon; and
- (iv)** A whole detached skin or portions of detached skin aggregating the equivalent of an average size whole skin.

(3) Blemished pea means a pea that is blemished by discoloration or by other means that does not materially affect the appearance or eating quality of the pea.

(4) Seriously blemished pea means a pea that is hard, shriveled, spotted, discolored, or otherwise blemished to an extent that the appearance or eating quality is seriously affected. Peas commonly referred to as **blond** or **cream colored** peas are not considered seriously blemished peas.

(c) Determination of allowances.

(1) Determining percent, by count, of pieces of peas.

- (i) The percent, by count, of pieces of peas is determined by dividing the total number of pieces of peas by the total number of peas and pieces of peas.
- (ii) A pea held together by its skin, even though the cotyledons are partly crushed or the skin split, is not considered as a broken pea or piece of pea.

(2) Harmless extraneous vegetable material.

- (i) The allowances for harmless extraneous vegetable material are based on 30 ounces of frozen peas. When considering sample units of less than 30 ounces, the allowances provided in this section for the respective grade classification will be permitted in a single sample unit: **Provided**, that the average of such defects in the entire sample does not exceed such allowance.

(d) "A" classification. Frozen peas that are practically free from defects may be given a score of 36 to 40 points. **Practically free from defects** means that: (See Table I of this subpart)

- (1)** For each 30 ounces of net weight there may be present not more than the following amounts of harmless extraneous vegetable material;
 - (i)** Group 1; flat material, pieces having an aggregate area of not more than 1/4 square inch (equivalent to 1/2 inch x 1/2 inch) on the surface; or 1 piece of any size;
 - (ii)** Group 2; spherical material, 1 unit; or
 - (iii)** Group 3; cylindrical material, a piece or pieces which singly or in the aggregate do not exceed 1/2 inch in length.
- (2)** Not more than 7 percent, by count, of the peas may be pieces of peas;
- (3)** Not more than 2 percent, by count, of the peas may be blemished including not more than one-half of 1 percent, by count, of all the peas that may be seriously blemished;

- (4) The presence of harmless extraneous vegetable material, pieces of peas, blemished peas, seriously blemished peas, and other defects individually or collectively, does not more than slightly affect the appearance or eating quality of the product.
- (e) **"B" classification.** Frozen peas that are reasonably free from defects may be given a score of 32 to 35 points. Frozen peas that fall into this classification, except for pieces of peas, shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a partial limiting rule). **Reasonably free from defects** means that: (see Table I of this subpart)
- (1) For each 30 ounces of net weight there may be present not more than the following amounts of harmless extraneous vegetable material:
- (i) When present as a single group:
- (a) Group 1; flat material, pieces having an aggregate area of not more than 1/2 square inch (equivalent to 1/2 inch x 1 inch) on the surface; or 1 piece of any size; or
- (b) Group 2; spherical material, 2 units; or
- (c) Group 3; cylindrical material, a piece or pieces which singly or in the aggregate do not exceed 1 inch in length.
- (ii) When present in combination, not more than 2 of any of the following groups:
- (a) Group 1; flat material, pieces having an aggregate area of not more than 1/4 square inch (equivalent to 1/2 inch x 1/2 inch) on the surface; or 1 piece of any size;
- (b) Group 2; spherical material, 1 unit;
- (c) Group 3; cylindrical material, a piece or pieces which singly or in the aggregate do not exceed 1/2 inch in length.
- (2) Not more than 10 percent, by count, of the peas may be pieces of peas;

- (3) Not more than 4 percent, by count, of the peas may be blemished including not more than 1 percent, by count, of all the peas that may be seriously blemished;
 - (4) The presence of harmless extraneous vegetable material, pieces of peas, blemished peas, seriously blemished peas, and other defects, individually or collectively, does not materially affect the appearance or eating quality of the product.
- (f) **"C" classification.** Frozen peas that are fairly free from defects may be given a score of 28 to 31 points. Frozen peas that fall into this classification, except for pieces of peas, shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a partial limiting rule). **Fairly free from defects** means that: (see Table I of this subpart)
- (1) For each 30 ounces of net weight there may be present not more than the following amounts of harmless extraneous vegetable material:
 - (i) When present as a single group:
 - (a) Group 1; flat material, pieces having an aggregate area of not more than 1 square inch (equivalent to 1 inch x 1 inch) on the surface; or 1 piece of any size; or
 - (b) Group 2; spherical material, 3 units; or
 - (c) Group 3; cylindrical material, a piece or pieces which singly or in the aggregate do not exceed 2 inches in length.
 - (ii) When present in combination, not more than 2 of any of the following groups:
 - (a) Group 1; flat material, pieces having an aggregate area of not more than 1/2 square inch (equivalent to 1/2 inch x 1 inch) on the surface; or 1 piece of any size;
 - (b) Group 2; spherical material, 2 units;
 - (c) Group 3; cylindrical material, a piece or pieces which singly or in the aggregate do not exceed 1 inch in length.

- (2) Not more than 15 percent, by count, of the peas may be pieces of peas;
 - (3) Not more than 6 percent, by count, of the peas may be blemished including not more than 3 percent, by count, of all the peas that may be seriously blemished;
 - (4) The presence of harmless extraneous vegetable material, pieces of peas, blemished peas, seriously blemished peas, and other defects, individually or collectively, does not seriously affect the appearance or eating quality of the product.
- (g) **"SStd" classification.** Frozen peas that fail to meet the requirements of paragraph (f) of this section may be given a score of 0 to 27 points. Frozen peas that fall into this classification, except for pieces of peas that exceed 15 percent, by count, but do not exceed 20 percent, by count, shall not be graded above Substandard, regardless of the total score for the product (this is a partial limiting rule).

Table I - Summary of Maximum Allowances for Defects

Kind of defect	Grade Classification				
	Grade A	Grade B		Grade C	
		When present as single group	Combination of any two	When present as single group	Combination of any two
Harmless extraneous vegetable material (for each 30 oz)					
Group 1 - Flat material	1/4 square inch or 1 piece of any size.	1/2 square inch or 1 piece of any size.	1/4 square inch or 1 piece of any size.	1 square inch or piece of any size.	1/2 square in. or 1 piece of any size.
	or	or		or	
Group 2 - Spherical material	1 unit	2 units	1 unit	3 units	2 units.
	or	or		or	
Group 3 - Cylindrical material	1 piece of pieces not exceeding 1/2 in. aggregate.	1 piece or pieces not exceeding 1 in. aggregate.	1 piece or pieces not exceeding 1/2 in. aggregate,	1 piece or pieces not exceeding 2 in. aggregate.	1 piece or pieces not exceeding 1 in. aggregate.
Pieces of peas	7 percent ^{1/} by count	10 percent ^{1/} by count		15 percent ^{1/} by count.	
Blemished peas	2 percent by count	4 percent by count		6 percent by count.	
	which includes	which includes		which includes	
Seriously blemished peas	1/2 percent by count	1 percent by count		3 percent by count	

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^{1/} Limiting rule does not apply

§52.3517 Tenderness and maturity.

- (a) **General.** The factor of tenderness and maturity refers to the degree of maturity of frozen peas as determined on the basis of the brine flotation test set forth in §52.3518 by first removing the skins from the peas, and as reflected in the tenderness determined on the cooked product.
- (b) **"A" classification.** Frozen peas that are tender may be given a score of 36 to 40 points. **Tender** means that the peas are in such a stage of maturity that not more than 10 percent, by count, of the peas may sink in a solution containing 13 percent, by weight, of salt (See Table II of this subpart); and that the frozen peas after cooking are very tender upon eating.
- (c) **"B" classification.** Frozen peas that are reasonably tender may be given a score of 32 to 35 points. Frozen peas 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 tender** means that the peas are in such a stage of maturity that not more than 12 percent, by count, of the peas may sink in a solution containing 15 percent, by weight, of salt (See Table II of this subpart); and that the frozen peas after cooking are reasonably tender upon eating.
- (d) **"C" classification.** Frozen peas that are fairly tender may be given a score of 28 to 31 points. Frozen peas that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule). **Fairly tender** means that the peas are in such a stage of maturity that not more than 16 percent, by count, of the peas may sink in a solution containing 16 percent, by weight, of salt (See Table II of this subpart); and that the frozen peas after cooking are fairly tender upon eating.
- (e) **"SStd" classification.** Frozen pea that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 27 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

Table II - Summary of Maximum Allowances for the Brine Test

Grade classification	Score range	Maximum number of peas (skins removed) that sink in 10 seconds	Salt in solution
			Percent
Grade A	36 to 40	10 percent by count	13
Grade B	32 to 35	12 percent by count	15
Grade C	28 to 31	16 percent by count	16

§52.3518 Brine flotation test.

- (a) **Explanation.** 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 at 20 degrees C. In making the test the brine solutions are standardized to the proper specific gravity equivalent to the specified **percent of salt solutions at 20 degrees C.** by using a salometer spindle accurately calibrated at 20 degrees C. A 250 ml glass beaker or similar receptacle is filled with the brine solution to a depth of approximately 2 inches. The brine solution and sample must be at the same temperature and should closely approximate 20 degrees C.
- (b) **Procedure.** After carefully removing the skins from the peas, place the peas into the solution. Pieces of peas and loose skin should not be used in making the brine flotation test. If cotyledons divide, use both cotyledons in the test and consider the 2 separated cotyledons as 1 pea; and, if an odd cotyledon sinks, consider it as one pea. Only peas that sink to the bottom, of the receptacle within 10 seconds after immersion are counted as **peas that sink.**

§52.3519 Ascertaining the grade of a lot.

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

§52.3520 Score sheet for frozen peas.

Size and kind of container			
Container mark or identification			
Label			
Net weight (ounces)			
Factors		Score Points	
Color	20	"A"	18-20
		"B"	16-17 <u>2/</u>
		"C"	14-15 <u>2/</u>
		"SStd"	0-13 <u>1/</u>
Defects	40	"A"	36-40
		"B"	32-35 <u>2/</u>
		"C"	28-31 <u>2/</u>
		"SStd"	0-27 <u>2/</u>
Tenderness and maturity	40	"A"	36-40
		"B"	32-35 <u>1/</u>
		"C"	28-31 <u>1/</u>
		"SStd"	0-27 <u>1/</u>
Total Score	100	"SStd"	0-27 <u>1/</u>
Flavor () Good () Fairly good () Off			
Varietal characteristics () Similar () Dissimilar			
U.S. Grade			

- 1/ Indicates limiting rule.
- 2/ Indicates partial limiting rule.

The United States Standards for Grade of Frozen Peas (which is the sixth issue) contained in this subpart shall become effective fifteen days after the date of publication in the **FEDERAL REGISTER** and thereupon will supersede the United States Standards for Grades of Frozen Peas which have been in effect since March 15, 1945.

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Roy W. Lennartson,
Deputy Administrator,
Marketing Services.

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