



**United States  
Department of  
Agriculture**

**Agricultural  
Marketing  
Service**

**Fruit and  
Vegetable  
Division**

**Processed  
Products  
Branch**

# **United States Standards for Grades of Frozen Grapefruit**

**Effective date February 20, 1948**

This is the first issue of the United States Standards for Grades of Frozen Grapefruit, which became effective February 20, 1948.

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  
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## United States Standards for Grades of Frozen Grapefruit

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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).

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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.

**§52.1171 Product description.**

Frozen grapefruit is prepared from the matured fruit of the grapefruit tree (*Citrus paradisi*), after the fruit has been washed and peeled, and has been separated into segments by removing the core, seeds, and membrane; may be packed with or without packing media; and is frozen and stored at temperatures necessary for the preservation of the product.

**§52.1172 Grades of frozen grapefruit.**

- (a) **U.S. Grade A or U.S. Fancy** is the quality of frozen grapefruit of which not less than 75 percent by weight of the grapefruit consists of segments that are whole or almost whole; that possesses a practically uniform, bright, typical color; that is practically free from defects; that possesses a good character; that possesses a normal flavor and odor; and scores not less than 90 points when scored in accordance with the scoring system outlined in this subpart.
- (b) **U.S. Grade B or U.S. Choice** is the quality of frozen grapefruit of which not less than 50 percent by weight of the grapefruit consists of segments that are whole or almost whole; that possesses a reasonably uniform and reasonably good color; that is reasonably free from defects; that possesses a reasonably good character; that possesses a normal flavor and odor; and scores not less than 80 points when scored in accordance with the scoring system outlined in this subpart.
- (c) **U.S. Broken** is the quality of frozen grapefruit of which less than 50 percent by weight of the grapefruit consists of segments that are whole or almost whole; that possesses a reasonably uniform and reasonably good color; that is reasonably free from defects; that possesses a reasonably good character; that possesses a normal flavor and odor; and scores not less than 70 points when scored in accordance with the scoring system outlined in this subpart.
- (d) **U.S. Grade D or Substandard** is the quality of frozen grapefruit that fails to meet the requirements of U.S. Grade B or U.S. Choice and U.S. Broken.

**§52.1173 Ascertaining the grade.**

- (a) The grade of frozen grapefruit is determined immediately after thawing to the extent that the units may be separated easily. Such grade may be ascertained by considering, in addition to the requirements of the respective grade, the following factors: Wholeness, color, absence of defects, and character.

- (b) The relative importance of each factor has been expressed numerically on the scale of 100. The maximum number of points that may be given for each factor is:

Factors	Points
Wholeness .....	20
Color .....	20
Absence of defects .....	30
Character .....	<u>30</u>
Total Score .....	100

- (c) **Normal flavor and odor** means that the grapefruit is free from objectionable flavors, off flavors, and objectionable odors of any kind.

**§52.1174    Ascertaining the rating of each factor.**

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

**§52.1175    Wholeness.**

- (a) **Definitions.**

- (1) **Whole or whole segment** means any segment that retains its apparent original conformation, is not excessively trimmed, and weighs not less than 3/8 ounce. A whole segment that is excessively trimmed or that weighs less than 3/8 ounce is considered a broken segment.
- (2) **Almost whole or almost whole segment** means any portion of a segment that is not less than 75 percent of the apparent original segment size, is not excessively trimmed, and weighs not less than 3/8 ounce. An almost whole segment that is excessively trimmed or that weighs less than 3/8 ounce is considered a broken segment.
- (3) **Broken or broken segment** means a portion of a segment that is less than 75 percent of the apparent original segment size, a whole or almost whole segment that is excessively trimmed, a whole or almost whole segment that weighs less than 3/8 ounce, and portions of segments that are joined together only by a **thread** or membrane.

- (b) **"A" classification.** Frozen grapefruit that consists of not less than 75 percent by weight of units that are whole or almost whole segments may be given a score of 18 to 20 points.
- (c) **"B" classification.** If the frozen grapefruit consists of at least 50 percent but less than 75 percent by weight of units that are whole or almost whole segments, a score of 16 or 17 points may be given. Frozen grapefruit that falls into this classification shall not be graded above U.S. Grade B or U.S. Choice, regardless of the total score for the product (this is a limiting rule).
- (d) **"Broken" classification.** If the frozen grapefruit consists of less than 50 percent by weight of the units that are whole or almost whole segments, a score of 0 to 15 points may be given. Frozen grapefruit that falls into this classification shall not be graded above U.S. Broken, regardless of the total score for the product (this is a limiting rule).
- (e) **General.** The evaluation of the score points for the factor of wholeness may be determined from Table No. I of this paragraph which indicates the score range in the respective grades and denotes the minimum requirement for whole or almost whole segments and the maximum allowances for broken segments for the score indicated.

**Table No. 1**

Grade	Score points	Whole or almost whole segments Minimum (by weight)	Broken Segments Maximum (by weight)
U.S. Grade A or U.S. Fancy	20	100%	0%
	19	85%	15%
	18	75%	25%
U.S. Grade B or U.S. Choice	17	60%	40%
	16	50%	50%
U.S. Broken	15	45%	55%
	14	40%	60%
	13	35%	65%
	12	30%	70%
	11	25%	75%
	10	20%	80%
	9	15%	85%
	8	10%	90%
	7	5%	95%
	6	0%	(1)
	5	0%	(1)
	4	0%	(1)
	3	0%	(1)
	2	0%	(1)
	1	0%	(1)
	0	0%	(1)

(1) Large to small: 100% and depending on size of broken units.

**§52.1176 Color.**

- (a) **General.** Federal inspection certificates may designate pink grapefruit whenever that fact is determined.

  - (1) The uniformity and intensity of the typical color is considered in determining the factor of color.
- (b) **"A" classification.** Frozen grapefruit that possesses a practically uniform, bright, typical color may be given a score of 18 to 20 points. **Practically uniform, bright, typical color** means that the grapefruit may possess not more than a slight variation from the typical color of properly matured grapefruit or pink grapefruit from which prepared.
- (c) **"B" classification.** If the frozen grapefruit possesses a reasonably uniform and reasonably good color, a score of 16 or 17 points may be given. Frozen grapefruit that falls into this classification shall not be graded above U.S. Grade B or U.S. Choice, regardless of the total score for the product (this is a limiting rule). **Reasonably uniform and reasonably good color** means that the grapefruit may be variable in color, is fairly bright, and is not off color.
- (d) **"SStd" classification.** Frozen grapefruit that fails to meet the requirements of paragraph (c) of this section may be given a score of 0 to 15 points and shall not be graded above U.S. Grade D or Substandard, regardless of the total score for the product (this is a limiting rule).

**§52.1177 Absence of defects.**

- (a) **General.** The factor of absence of defects refers to the degree of freedom from harmless extraneous material, from seeds, from portions of covering membrane, and from damaged units.

  - (1) **Harmless extraneous material** means leaves, small pieces of peel, and other similar material.
  - (2) **Seed** means any seed, whether or not fully developed, that measures more than 3/16 inch in any dimension. A **large seed** is one that may be plump and measures more than 3/8 inch in any dimension.
  - (3) **Damaged unit** means any unit that is damaged by pathological injury, by lye peeling, by discoloration, or by similar injury or that is damaged to such an extent that the appearance or eating quality of the unit is seriously affected.



- (b) **"A" classification.** Frozen grapefruit that is practically free from defects may be given a score of 27 to 30 points. **Practically free from defects** means that no harmless extraneous material is present; that not more than 5 percent by weight of the grapefruit may be damaged units; and that for each 16 ounces of net weight there may be present:
- (1) Not more than 6 seeds including not more than 1 large seed; and
  - (2) Not more than an aggregate area of 1 square inch on the units covered by membrane.
- (c) **"B" classification.** If the frozen grapefruit is reasonably free from defects, a score of 24 to 26 points may be given. Frozen grapefruit that falls into this classification shall not be graded above U.S. Grade B or U.S. Choice, regardless of the total score for the product (this is a limiting rule). **Reasonably free from defects** means that not more than 10 percent by weight of the grapefruit may be damaged units; and that for each 16 ounces of net weight there may be present:
- (1) Not more than 1 small piece of harmless extraneous material;
  - (2) Not more than 12 seeds including not more than 3 large seeds; and
  - (3) Not more than an aggregate area of 2 square inches on the units covered by membrane.
- (d) **"SStd" classification.** Frozen grapefruit that fails 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 U.S. Grade D or Substandard, regardless of the total score for the product (this is a limiting rule).
- (e) **General.** The evaluation of the score points for the factor of absence of defects may be determined from Table No. II of this paragraph which indicates the maximum allowances for each type of defects for the score indicated.

**Table No. II**

Grade and score points	Harmless extraneous material	Damaged units	Seeds	Aggregate area covered by membrane
	Maximum			
	Per 16 ounces	By weight	Per 16 ounces	
U.S. Grade A or U.S. Fancy:				
30 . . . . .	None . . . . .	1%	None . . . . .	None.
29 . . . . .	None . . . . .	2%	2, but no large seeds	1/2 square inch.
28 . . . . .	None . . . . .	3%	4, but no large seeds	3/4 square inch.
27 . . . . .	None . . . . .	5%	6, including 1 large seed . . . . .	1 square inch.
U.S. Grade B or U.S. Choice and Broken:				
26 . . . . .	1 small piece . .	7%	8, including 1 large seed . . . . .	1-1/2 square inches.
25 . . . . .	1 small piece . .	9%	10, including 2 large seeds . . . . .	1-3/4 square inches.
24 . . . . .	1 small piece . .	10%	12, including 3 large seeds . . . . .	2 square inches.
U.S. Grade D or Substandard:				
23 or less	More than allowances permitted for 24 points.			

**§52.1178 Character.**

- (a) **General.** The factor of character refers to the structure and condition of the cells and reflects the maturity of the grapefruit.
- (b) **"A" classification.** Frozen grapefruit that possesses a good character may be given a score of 27 to 30 points. **Good character** means that the grapefruit is moderately firm and fleshy; that the segments possess a well-developed, juicy, cellular structure; that the product is fairly free from loose cell sacs; and that not more than 5 percent by weight of the grapefruit consists of soft, fibrous, or **ricey** segments.

- (c) **"B" classification.** If the frozen grapefruit possesses a reasonably good character, a score of 24 to 26 points may be given. Frozen grapefruit that falls into this classification shall not be graded above U.S. Grade B or U.S. Choice, regardless of the total score for the product (this is a limiting rule). **Reasonably good character** means that the grapefruit is fairly firm and fleshy and that not more than 15 percent by weight of the grapefruit consists of soft, fibrous, or **ricey** segments.
  
- (d) **"SStd" classification.** Frozen grapefruit that fails 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 U.S. Grade D or Substandard, regardless of the total score for the product (this is a limiting rule).

**§52.1179    Ascertaining the grade of a lot.**

The grade of a lot of frozen grapefruit 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 (§52.1 to §52.83).

**§52.1180 Score sheet for frozen grapefruit.**

Number, size and kind of container .....			
Container marks or identification .....			
Label (style of pack: ratio of fruit-sugar, etc, if shown) .....			
Net Weight .....			
Color (if <b>pink</b> varieties) .....			
Factors		Score points	
Wholeness .....	20	(A)	18-20
		(B)	16-17 <u>1/</u>
		(SStd)	0-15 <u>1/</u>
Color .....	20	(A)	18-20
		(B)	16-17 <u>1/</u>
		(SStd)	0-15 <u>1/</u>
Absence of defects .....	30	(A)	27-30
		(B)	24-26 <u>1/</u>
		(SStd)	0-23 <u>1/</u>
Character .....	<u>30</u>	(A)	27-30
		(B)	24-26 <u>1/</u>
		(SStd)	0-23 <u>1/</u>
Total score .....	100		
Normal flavor and odor .....			
U.S. Grade .....			

1/ Indicates limiting rule.

Recodified in the Federal Register of December 9, 1953 (18 F.R. 7989)  
 Section 52.1179 amended May 22, 1957 (22 F.R. 3535)