



**United States  
Department of  
Agriculture**

**Agricultural  
Marketing  
Service**

**Fruit and  
Vegetable  
Division**

**Processed  
Products  
Branch**

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

**Effective date January 25, 1949**

This is the first issue of the United States Standards for Grades of Frozen Pineapple published in the **FEDERAL REGISTER** of December 25, 1948, (13 FR 8321) to become effective January 25, 1949.

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  
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## United States Standards for Grades of Frozen Pineapple

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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: The requirements 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.

## **§52.1741 Product description**

Frozen pineapple is prepared from the properly ripened fruit of the pineapple plant (*Ananas sativus* or *Ananas comosus*); is peeled, cored, trimmed, and washed; may be packed with or without packing media; and is frozen and stored at temperatures necessary for the preservation of the product.

## **§52.1742 Styles of frozen pineapple.**

- (a) Whole slices.** Frozen whole slices of pineapple consist of whole, practically unbroken slices of pineapple that have been cut, at a right angle to the longitudinal axis, into approximately equal units.
- (b) Half slices.** Frozen half slices of pineapple are such portions of whole slices of pineapple that are so matched in size and thickness that two portions are approximately equivalent to a slice.
- (c) Broken slices.** Frozen broken slices of pineapple consist of portions of slices of pineapple, if such portions are approximately of the same thickness and diameter.
- (d) Crushed.** Frozen crushed pineapple is pineapple that has been cut, shredded, or crushed into fine pieces.
- (e) Tidbits.** Frozen tidbits of pineapple are small, wedge shaped sections cut from slices or portions of slices of pineapple.
- (f) Chunks.** Frozen chunks of pineapple are pieces of pineapple which do not conform to any of the foregoing styles, which need not be symmetrical nor uniform in size, and which do not exceed 1-1/2 inches in any dimension.

## **§52.1743 Grades of frozen pineapple.**

- (a) U.S. Grade A or U.S. Fancy** is the quality of whole slices, crushed, tidbits, or chunks that possess a practically uniform, bright, characteristic yellow color in the applicable style; are practically uniform in size and symmetry in the applicable style; are practically free from defects in the applicable style; possess a good character in the applicable style; possess a normal flavor and odor; and score 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 whole slices, crushed, tidbits, or chunks that possess a reasonably uniform, good, characteristic yellow color in the applicable style; are reasonably uniform in size and symmetry in the applicable style; are reasonably free from defects in the applicable style; possess a reasonably uniform, reasonably good character in the applicable style; possess a normal flavor and odor; and score not less than 80 points when scored in accordance with scoring system outlined in this subpart.
- (c) **U.S. Grade C or U.S. Standard** is the quality of half slices and broken slices that are fairly uniform in size and symmetry; possess a fairly uniform, fairly good, characteristic yellow color or better color; are fairly free from defects; possess a fairly good character; possess a normal flavor and odor; and score 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 (1) the quality of whole slices, crushed, tidbits, or chunks that fail to meet the requirements of **U.S. Grade B or U.S. Choice**; or (2) the quality of half slices or broken slices that fail to meet the requirements of **U.S. Grade C or U.S. Standard**.

**§52.1744 Ascertaining the grade.**

- (a) The grade of frozen pineapple is determined immediately after thawing to the extent that the mass or units may be easily separated. The grade of frozen pineapple may be ascertained by considering, in addition to the requirements of the respective grade, the following factors: Color, uniformity of size and symmetry, absence of defects, and character.
- (b) The relative importance of each factor is expressed numerically on the scale of 100. The maximum number of points that may be given for each factor is:

Factors	Points
Color . . . . .	20
Uniformity of size and symmetry . . . . .	20
Absence of defects . . . . .	30
Character . . . . .	<u>30</u>
Total score . . . . .	100

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

**§52.1745    Ascertaining the ration 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).

**§52.1746    Color.**

- (a)    "A" classification.** Whole slices, crushed, tidbits, or chunks that possess a practically uniform, bright, characteristic yellow color, may be given a score of 18 to 20 points. **Practically uniform, bright, characteristic yellow color** means that the frozen pineapple has a yellow color typical of frozen pineapple and that there may be some variation of such color in the mass or of the units.
- (b)    "B" classification.** Whole slices, crushed, tidbits, or chunks that possess a reasonably uniform, good characteristic yellow color, may be given a score of 16 or 17 points. Frozen pineapple 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, good, characteristic yellow color** means that the frozen pineapple may have considerable variation of such color in the mass or of the units.
- (c)    "C" classification.** Half slices or broken slices that possess a fairly uniform, fairly good, characteristic yellow color or better color may be given a score of 14 or 15 points. Frozen pineapple that falls into this classification shall not be graded above **U.S. Grade C or U.S. Standard**, regardless of the total score for the product (this is a limiting rule). **Fairly uniform, fairly good, characteristic yellow color**, means that the individual units of the frozen pineapple may vary markedly from a uniform, typical yellow color and may be slightly dull in color.
- (d)    "SStd" classification.** Frozen pineapple that possesses a grayish cast or is definitely dull or off-color for any reason, or that fails to meet the requirements of paragraphs (a), (b), or (c) of this section for the applicable style may be given a score of 0 to 13 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).

**§52.1747 Uniformity of size and symmetry.**

- (a) **General.** The factor of uniformity of size and symmetry shall not be scored when grading frozen crushed pineapple or frozen chunks of pineapple. The other three factors shall be scored and the total shall be multiplied by 100 and divided by 80, dropping any fractions, to determine the total score.
- (b) **"A" classification.** If the frozen pineapple units are practically uniform in size and symmetry, a score of 18 to 20 points may be given. **Practically uniform in size and symmetry** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
  - (1) **Whole slices and tidbits.** All of the units within each style are the same apparent thickness, size, and shape, with not more than a slight deviation in actual dimensions.
- (c) **"B" classification.** If the frozen pineapple units are reasonably uniform in size and symmetry, a score of 16 or 17 points may be given. Frozen pineapple 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 in size and symmetry** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
  - (1) **Whole slices and tidbits.** The units within each style may vary in thickness, size, and shape with more than a slight deviation in actual dimensions.
- (d) **"C" classification.** If the frozen pineapple units consist of half slices or broken slices, a score of 14 or 15 points may be given. Frozen pineapple that falls into this classification shall not be graded above **U.S. Grade C or U.S. Standard**, regardless of the total score for the product (this is a limiting rule).

**§52.1748 Absence of defects.**

- (a) **General.** The factor of absence of defects refers to the degree of freedom from blemished units; from excessively trimmed units; from broken units; and from crushed units. (See Table No. I of this subpart.)
  - (1) **Blemished units** are units of frozen pineapple with any fruit eye more than 1/32 inch in diameter, deep fruit eyes regardless of area, brown spots, peel, bruise, or other injury.

- (2) **Excessively trimmed units** means that the units have been so trimmed that they do not retain their apparent original conformation.
  - (3) **Broken units** means that whole slices are definitely severed from core hole to perimeter.
  - (4) **Crushed units**, except for crushed style, means that the units have been crushed to the extent that they are not of normal shape.
- (b) **"A" classification.** Frozen pineapple that is practically free from defects may be given a score of 27 to 30 points. **Practically free from defects** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
- (1) **Whole slices.** No units are crushed; no units are excessively trimmed; not more than 5 percent, by count, may be blemished; and not more than 10 percent, by count, may be broken in one place only. One blemished unit and one broken unit are permitted if one unit exceeds the respective allowance of 5 percent and 10 percent by count.
  - (2) **Tidbits and chunks.** Not more than 5 percent, by count, may be crushed and not more than 5 percent by count, may be blemished.
  - (3) **Crushed.** Not more than 1/2 percent by weight, may be blemished units. In determining the weight of blemished material, the weight of the entire blemished piece is included and the percentage is based on the net weight of the pineapple.
- (c) **"B" classification.** Frozen pineapple that is reasonably free from defects may be given a score of 24 to 26 points. Frozen pineapple 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** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
- (1) **Whole slices.** Not more than 3 percent, by count, may be excessively trimmed; not more than 5 percent, by count, may be crushed; and not more than 12 1/2 percent, by count, may be blemished; and not more than 25 percent, by count, may be broken in one place only.



- (2) **Tidbits and chunks.** Not more than 5 percent, by count, may be crushed and not more than 12 1/2 percent by count, may be blemished.
- (3) **Crushed.** Not more than 1 percent by weight, may be blemished units. In determining the weight of blemished material, the weight of the entire piece is included and the percentage is based on the net weight of the frozen pineapple.
- (d) **"C" classification.** Frozen pineapple that is fairly free from defects may be given a score of 21 to 23 points. Frozen pineapple that falls into this classification shall not be graded above **U.S. Grade C or U.S. Standard**, regardless of the total score for the product (this is a limiting rule). **Fairly free from defects** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
- (1) **Half slices and broken slices.** Not more than 5 percent, by count, may be crushed, and not more than 12 1/2 percent, by count, may be blemished. Since half slices and broken slices of frozen pineapple are whole slices broken in more than one place, these styles are scored in this classification and shall not be graded above **U.S. Grade C or U.S. Standard**, regardless of the total score for the product (this is a limiting rule).
- (e) **"SStd" classification.** Whole slices, crushed, tidbits, and chunks of pineapple that fail to meet the paragraph (c) of this section; and half slices or broken slices of frozen pineapple that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 20 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).
- (f) **Evaluation of score.** The evaluation of the score for the factor of absence of defects may be determined from Table No. I of this subpart which indicates the maximum allowances for each type of defect for the score indicated.

Table No. 1-Allowances for Defects in Frozen Pineapple

Grade	Score points	Whole slices				Crushed-Blemished units	Half slices and broken slices		Tidbits and chunks	
		Crushed units	Excessively trimmed	Blemished units	Broken units		Crushed units	Blemished units	Crushed units	Blemished units
		Maximum allowances								
		By count				By weight	By count			
U.S. Grade A or U.S. Fancy	30	None	None	2%	4%	1/4%	.....	.....	2%	2%
	29	None	None	3%	6%	1/4%	.....	.....	3%	3%
	28	None	None	4%	8%	1/2%	.....	.....	4%	4%
	27	None	None	5%	10%	1/2%	.....	.....	5%	5%
U.S. Grade B or U.S. Choice	26	1%	1%	6%	15%	3/4%	.....	.....	2%	6%
	25	3%	2%	9%	20%	3/4%	.....	.....	3%	9%
	24	5%	3%	12 1/2%	25%	1%	.....	.....	5%	12 1/2%
U.S. Grade C or U.S. Standard	23	.....	.....	.....	.....	.....	1%	6%	.....	.....
	22	.....	.....	.....	.....	.....	3%	9%	.....	.....
	22	.....	.....	.....	.....	.....	5%	12 1/2%	.....	.....
U.S. Grade D or Substandard	20 or less	More than allowances permitted for 24 points.					More than allowances permitted for 21 points		More than allowances permitted for 24 points	

§52.1749 **Character.**

- (a) **General.** The factor of character refers to the degree of ripeness and texture of the fruit.
- (b) **"A" classification.** Frozen pineapple that possesses a good character may be given a score of 27 to 30 points. **Good character** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
- (1) **Whole slices, tidbits, and crushed.** The fruit is of practically uniform ripeness and there may be present not more than 2 1/2 percent, by weight of the pineapple, that is core material or fibrous stock; and in the case of whole slices and tidbits, the fruit is reasonably firm and the fruitlets appear as a compact structure, reasonably free from porosity.
  - (2) **Chunks.** The fruit is of practically uniform ripeness and normally has had more of the fibrous portions around the core hole removed than is the case with other styles of pack; the fruit is reasonably firm and the fruitlets appear as a compact structure, reasonably free from porosity.
- (c) **"B" classification.** Frozen pineapple that possesses a reasonably good character may be given a score of 24 to 26 points. Frozen pineapple which 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** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
- (1) **Whole slices, tidbits, and crushed.** The fruit is of reasonably uniform ripeness and there may be present not more than 5 percent, by weight of the pineapple, that is core material or fibrous stock; and, in the case of whole slices and tidbits, the fruitlets are reasonably compact in structure, fairly free from porosity.
  - (2) **Chunks.** The fruit is of reasonably uniform ripeness and normally has had more of the fibrous portions around the core hole removed than is the case with other styles of pack; and the fruitlets are reasonably compact in structure, fairly free from porosity.

- (d) **"C" classification.** Frozen pineapple that possesses a fairly good character, a score of 21 to 23 points may be given. Frozen pineapple that falls into this classification shall not be graded above **U.S. Grade C or U.S. Standard** regardless of the total score for the product (this is a limiting rule). **Fairly good character** has the following meaning with respect to, and applies only to, the following styles of frozen pineapple:
- (1) **Half slices and broken slices.** The texture may be variable and there may be present not more than 5 percent, by weight of the pineapple, that is core material or fibrous stock and the fruitlets may be flaccid and loosely constructed.
- (e) **"SStd" classification.** Whole slices, crushed, tidbits, and chunks of pineapple that fail to meet paragraph (c) of this section; and half slices and broken slices that fail to meet the requirements of paragraph (d) of this section; may be given a score of 0 to 20 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).

**§52.1750    Ascertaining the grade of a lot.**

The grade of a lot of frozen pineapple 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; 22 F.R. 3535).

**§52.1751 Score sheet for frozen pineapple.**

Size and kind of container .....			
Container mark or identification .....			
Label (style of pack: Ratio of fruit to sugar, etc., if shown) .....			
Net weight .....			
Style .....			
Count (of whole slices) .....			
Factors		Score Points	
Color .....	20	"A"	18-20
		"B"	16-17 <u>1/</u>
		"C"	14-15 <u>1/</u>
		"D"	0-13 <u>1/</u>
Uniformity of size and symmetry .....	20	"A"	18-20
		"B"	16-17 <u>1/</u>
		"C"	14-15 <u>1/</u>
Absence of Defects .....	30	"A"	27-30
		"B"	24-26 <u>1/</u>
		"C"	21-23 <u>1/</u>
		"D"	0-20 <u>1/</u>
Character .....	30	"A"	27-30
		"B"	24-26 <u>1/</u>
		"C"	21-23 <u>1/</u>
		"D"	0-20 <u>1/</u>
Total Score .....	100		
Normal flavor and odor .....			
Grade .....			

1/ Indicates limiting rule.

Recodified in the **FEDERAL REGISTER** of December 9, 1953, (18 F.R. 8037).  
 Section 52.1750 amended May 22, 1957, (22 F.R. 3535).