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United States Standards for Grades of Frozen Apples

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This is a reprint of the United States Standards for Grades of Frozen Apples (19 FR 2157) which have been in effect since May 17, 1954 and were updated to modify the format and to correct and align the text as originally published in the CFR.

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

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 Frozen Apples

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Product Description, Styles, and Grades

§52.361 Product description.

Frozen apples are prepared from sound, properly ripened fruit of *Malus sylvestris* (*Pyrus malus*); are peeled, cored, trimmed, sliced, sorted, and washed; are properly drained before filling into containers; may be packed with or without the addition of a nutritive sweetening ingredient and any other ingredient permissible under the provisions of the Federal Food, Drug, and Cosmetic Act; and are frozen in accordance with good commercial practice and maintained at temperatures necessary for the preservation of the product.

§52.362 Styles of frozen apples.

- (a) **Slices** means frozen apples consisting of slices of apples cut longitudinally and radially from the core axis.

§52.363 Grades of frozen apples.

- (a) **U.S. Grade A or U.S. Fancy** is the quality of frozen apples that possess similar varietal characteristics; that possess a good flavor; that possess a good color; that are practically uniform in size; that are practically free from defects; that possess a good character; and that score not less than 85 points when scored in accordance with the scoring system outlined in this subpart: **Provided**, That the frozen apples may be only fairly uniform in size, if the total score is not less than 85 points.
- (b) **U.S. Grade C or U.S. Standard** is the quality of frozen apples that possess similar varietal characteristics; that possess a fairly good flavor; that possess a fairly good color; that are fairly uniform in size; that are fairly free from defects; that possess a fairly good character; and that score not less than 70 points when scored in accordance with the scoring system outlined in this subpart.
- (c) **Substandard** is the quality of frozen apples that fail to meet the requirements of U.S. Grade C or U.S. Standard.

Factors of Quality

§52.364 Ascertaining the grade.

- (a) The grade of frozen apples is ascertained by considering the requirements with respect to varietal characteristics, which are not scored, and the factors of color, size, defects, and character, which are scored.
- (b) 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 is:

Factors	Points
Color	20
Size	20
Defects	20
Character	40
Total Score	100

- (c) The scores for the factors of color, size, defects, and character are determined immediately after thawing to the extent that the product is substantially free from ice crystals and can be handled as individual units.
- (d) **Good flavor** means that the product has a good, characteristic normal flavor and odor and is free from objectionable flavors and objectionable odors of any kind.
- (e) **Fairly good flavor** means that the product may be lacking in good flavor and odor and is free from objectionable flavors and objectionable odors of any kind.

§52.365 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 such factors and expressed numerically. The numerical range within each factor which is scored is inclusive (for example, **17 to 20 points** means 17, 18, 19, or 20 points).

§52.366 Color.

- (a) **“A” classification.** Frozen apples that possess a good color may be given a score of 17 to 20 points. **Good color** means that the frozen apples, internally and externally, possess a reasonably uniform bright color, characteristic of apples of similar varieties.
- (b) **“C” classification.** Frozen apples that possess a fairly good color may be given a score of 14 to 16 points. Frozen apples that fall 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 color** means that the frozen apples possess a color that is typical of apples of similar varietal characteristics, that may be variable, and that product may possess a slight but not markedly brown or gray cast and shall be practically free from internal discoloration.
- (c) **“SStd” classification.** Frozen apples that fail to meet the requirements of paragraph (b) 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).

§52.367 Size.

- (a) **General.** The factor of size refers to the degree of wholeness and to the uniformity of thickness of the units.
- (1) **Practically whole slice** means that the slice may be cut or broken but at least 3/4 of the original slice remains.
- (b) **“A” classification.** Frozen apples that are practically uniform in size may be given a score of 17 to 20 points. **Practically uniform in size** means that: At least 90 percent, by weight, of the product consists of whole or practically whole slices of 1-1/4 inches in length or longer, and that of the 90 percent, by weight, of the product consisting of units of the most uniform thickness, the thickness of the slices does not vary more than 1/4 inch.
- (c) **“C” classification.** Frozen apples that are fairly uniform in size may be given a score of 14 to 16 points. **Fairly uniform in size** means that at least 75 percent, by weight, of the product consists of whole or practically whole slices of 1-1/4 inches in length or longer.
- (d) **“SStd” classification.** Frozen apples 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 grade above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.368 Defects.

- (a) **General.** The factor of defects refers to the degree of freedom from harmless extraneous matter, from damaged or seriously damaged units, and from carpel tissue.
- (1) **Harmless extraneous matter** means any vegetable substance (including, but not being limited to, a leaf, stem, or portions thereof, cores and portions of cores, and seeds), that is harmless.
- (2) **Damaged unit** means any unit possessing green peel that exceeds in the aggregate an area of a circle 1/2 inch in diameter, or red peel that exceeds in the aggregate an area of a circle 1/4 inch in diameter, light brown bruise that exceeds the area of a circle 1/2 inch in diameter or which is more than 1/4 inch deep, and any unit in which the appearance or eating quality is materially affected by blossom end material, dark brown bruise, or other internal or external discoloration, or by any other means.
- (3) **Seriously damaged unit** means any unit damaged to such an extent that the appearance or eating quality is seriously affected.

- (4) **Practically free from carpel tissue** means that for each 16 ounces of the product, the carpel tissue present does not exceed in the aggregate an area equal to 3/4 square inch.
- (5) **Fairly free from carpel tissue** means that for each 16 ounces of the product the carpel tissue present does not exceed an area equal to 1-1/2 square inches.
- (b) **“A” classification.** Frozen apples that are practically free from defects may be given a score of 17 to 20 points. **Practically free from defects** means that extraneous matter may be present that does not materially affect the appearance or eating quality of the product; that the product is practically free from carpel tissue; and that not more than a total of 5 percent, by weight, of the units may be damaged, of which not more than 1 percent, by weight, of all the units may be seriously damaged: **Provided**, That extraneous matter, damaged and seriously damaged units, singly or in combination, do not materially affect the appearance or eating quality of the product.
- (c) **“C” classification.** Frozen apples that are fairly free from defects may be given a score of 14 to 16 points. Frozen apples that fall 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** means that extraneous matter may be present that does not seriously affect the appearance or eating quality of the product; that the product is fairly free from carpel tissue, and that not more than a total of 15 percent, by weight, of the units may be damaged, of which not more than 3 percent, by weight, of all the units may be seriously damaged: **Provided**, That extraneous matter, damaged and seriously damaged units, singly or in combination, do not seriously affect the appearance or eating quality of the product.
- (d) **“SStd” classification.** Frozen apples 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).

§52.369 Character.

- (a) **General.** The factor of character refers to the texture of the units and to the tendency to retain their conformation without material softening or disintegration.
- (1) **Mushy apples** means slices or units or portions thereof that are a pulpy mass and of a consistency approximating applesauce.
- (b) **“A” classification.** Frozen apples that possess a good character may be given a score of 34 to 40 points. **Good character** means that the units possess a reasonably uniform texture, are firm but not hard, with not more than 3 percent of

the weight of the product consisting of mushy apples.

- (c) **“C” classification.** Frozen apples that possess a fairly good character may be given a score of 28 to 33 points. Frozen apples that fall 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** means that the slices may be variable in texture, with not more than 12 percent of the weight of the product consisting of units that are markedly hard, markedly soft, or mushy.
- (d) **“SStd” classification.** Frozen apples that fail to meet the requirements of paragraph (c) 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).

Lot Inspection and Certification

§52.370 Ascertaining the grade of a lot.

The grade of a lot of the processed product 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 52.87).

Score Sheet

§52.371 Score sheet for frozen apples.

No. Size and kind of container			
Container mark or identification.....			
Label			
Net weight (ounces)			
Style			
Ratio of fruit-sugar.....			
Style of pack (sugar or sirup)			
Sirup density (degrees Brix).....			
Factors		Score points	
Color	20	"A"	17-20
		"C"	14-16 <u>1/</u>
		"SStd"	0-13 <u>1/</u>
Size	20	"A"	17-20
		"C"	14-16
		"SStd"	0-13 <u>1/</u>
Defects	20	"A"	17-20
		"C"	14-16 <u>1/</u>
		"SStd"	0-13 <u>1/</u>
Character	40	"A"	34-40
		"C"	28-33 <u>1/</u>
		"SStd"	0-27 <u>1/</u>
Total Score.....	100		
Good flavor.....			
Fairly good flavor.....			
Grade			

1/ Limiting rule.