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United States Standards for Grades of Canned Asparagus

Effective January 20, 2017

This issue of the United States Standards of Grades of Canned Asparagus (81 FR 93572) supersedes the previous issue which has been in effect since June 20, 1973.

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 Canned Asparagus

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Product Description, Styles, Grades, and Types
§52.2541 Identity.

Canned asparagus means the canned product prepared from clean, sound, succulent shoots of the asparagus plant (*Asparagus officinalis*) prepared and processed in accordance with good commercial practice as such product is defined in the standard of identity for Certain Other Canned Vegetables (21 CFR 155.200) issued pursuant to the Federal Food, Drug, and Cosmetic Act.

§52.2542 Styles.

- (a) **Spears** (stalks), which may be peeled or unpeeled, is the style of canned asparagus that consists of the head and adjoining portion of the shoot that is 3-3/4 inches or more in length.
- (b) **Tips** are the style of canned asparagus that consists of the head and adjoining portion of the shoot that is less than 3-3/4 inches but not less than 2-3/4 inches in length.
- (c) **Points** are the style of canned asparagus that consists of the head and adjoining portion of the shoot that is less than 2-3/4 inches in length.
- (d) **Cut spears** (cut stalks) is the style of canned asparagus that consists of shoots cut transversely into pieces. The recommended minimum percent, by count, of heads in cut spears is given in table I of this section.

Table I – Recommended Minimum Percent, By Count, of Heads, in Cut Spears

Length of units:	Percent of heads, by count
1-1/4 inches or less	15
Over 1-1/4 inches	20

- (e) **Bottom cuts or cuts-tips removed** is the style of canned asparagus that consists of portions of shoots with heads removed that are cut transversely into pieces.
- (f) **Mixed** is the style of canned asparagus consisting of two or more of the foregoing styles.

§52.2543 Grades.

- (a) **U.S. Grade A** is the quality of canned asparagus that possesses a good flavor; that possesses a clear liquor; that possesses a good color; that is practically free from defects; that possesses a good character; and that for those factors which are scored in accordance with the scoring system outlined in this section the total score is not less than 85 points: *Provided*, That the canned asparagus may possess a fairly clear liquor and a fairly good color if the total score is no less than 85 points.
- (b) **U.S. Grade C** is the quality of canned asparagus that possesses a fairly good flavor; that possesses a fairly clear liquor; that possesses a fairly good color; that is fairly free from defects; that possesses a fairly good character; and that scores not less than 70 points when scored in accordance with the scoring system outlined in this section.
- (c) **Substandard** is the quality of canned asparagus that fails to meet the requirements of U.S. Grade C.

§52.2544 Types.

The type of canned asparagus is not incorporated in the grades of the processed product, since the type of canned asparagus is not a factor of quality for the purpose of these grades. The type of asparagus may be designated in accordance with the following requirements:

- (a) **Green** (all green) consists of units of canned asparagus which are typical green, light green, or yellowish green in color.
- (b) **Green tipped** consists of canned asparagus spears, tips, and points, of which one-half or more of the unit measured from the tip end is green, light green, or yellowish green in color.
- (c) **Green tipped and white** consists of:
 - (1) Spears, tips, and points of canned asparagus which are typical white or yellowish white in color, and may have green, light green, or yellowish green heads, and the green color may extend to not more than one-half of the length of the stalk measured from the tip end; and
 - (2) Green tipped and white spears, tips, and points, when cut into units, may consist of a mixture of typical white, yellowish white, green, light green, or yellowish green units.

- (d) **White** consists of units of canned asparagus which are typical white or yellowish white in color.

Fill of Container, Drained Weights, and Fill Weights

§52.2545 Recommended fill of container.

The recommended fill of container for canned asparagus is not incorporated in the grades of the processed 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 of canned asparagus be filled as full as practicable with asparagus without impairment of quality.

§52.2546 Recommended minimum drained weights.

- (a) **General.** The minimum drained weight recommendations in table II are not incorporated in the grades of the processed product, since drained weight, as such, is not a factor of quality for the purpose of these grades.
- (b) **Method for ascertaining drained weights.** The drained weight of canned asparagus is determined by emptying the contents of the container upon a U.S. Standard No. 8 sieve of proper diameter, inclining the sieve to facilitate drainage, and allow draining for 2 minutes. The drained weight is the weight of the sieve and the asparagus less the weight of the dry sieve. A sieve 8 in. in diameter is used for the No. 2 1/2 can (401 x 411) and smaller sizes, and a sieve 12 in. in diameter is used for containers larger than the No. 2 1/2 can.
- (c) **Definitions of symbols.**
- (1) \overline{X}_d is the average drained weight of all the sample units in the sample.
- (2) LL is the lower limit for drained weights of individual sample units.
- (d) **Compliance with recommended minimum drained weights.** A lot of canned asparagus is considered as meeting the minimum drained weight recommendations if the following criteria are met:
- (1) The average of the drained weights of all the sample units in the sample meets the recommended minimum average drained weight (designated as \overline{X}_d in table II); and
- (2) The number of sample units which fail to meet the recommended drained weight lower limit for individuals (designated as LL in table II) does not exceed the applicable acceptance number specified in table III.

Table II – Recommended Minimum Drained Weights for Canned Asparagus

Container designation (metal, unless otherwise stated)	Container dimensions (inches; or water capacity in ounces avoirdupois as applicable)		Small, medium, or large sizes; and blends of these sizes				Extra-large, colossal, giant sizes; or blends including these sizes				Cuts spears, bottom cuts-tips removed			
	Diameter	Height	Green tipped and white; white (ounces)		Green and green tipped (ounces)		Green tipped and white; white (ounces)		Green and green tipped (ounces)		Green tipped and white (ounces)		Green (ounces)	
			LL	\overline{X}_d	LL	\overline{X}_d	LL	\overline{X}_d	LL	\overline{X}_d	LL	\overline{X}_d	LL	\overline{X}_d
8 oz. glass	8.5 oz. avdp	.....	4.8	5.1	4.6	4.9	4.8	5.1	4.6	4.9	4.7	5.0	4.4	4.7
8Z short	2-11/16	3	4.4	4.7	4.2	4.5	4.4	4.7	4.2	4.5	4.2	4.5	4.1	4.3
8Z tall	2-11/16	3-4/16	4.9	5.2	4.7	5.0	4.9	5.2	4.7	5.0	4.7	5.0	4.5	4.8
No. 1 picnic	2-11/16	4	6.6	7.0	5.8	6.2	6.1	6.5	5.6	6.0	6.2	6.5	5.7	6.0
12Z	2-11/16	4-9/16	7.6	8.0	7.1	7.5	7.3	7.7	6.8	7.2	7.3	7.7	6.8	7.2
13 1/2Z glass	14.0 oz. avdp	.....	8.6	9.1	7.8	8.3	8.1	8.6	7.5	8.0	.....	.....	.....	.....
No. 300	3	4-7/16	9.0	9.5	8.2	8.7	8.5	9.0	7.9	8.4	8.6	9.0	8.2	8.6
300 x 409	3	4-9/16	9.2	9.7	8.5	9.0	8.7	9.2	8.1	8.6	8.8	9.2	8.4	8.8
No. 1 ta II	3-1/16	4-11/16	9.9	10.5	8.8	9.4	9.3	9.9	8.5	9.1	9.1	9.6	8.6	9.1
No. 303 glass	17.7 oz. avdp	.....	10.3	10.9	9.1	9.7	9.7	10.3	8.8	9.4	9.4	9.9	8.9	9.4
No. 303	3-3/16	4-6/16	10.1	10.7	8.9	9.5	9.5	10.1	8.6	9.2	9.2	9.7	8.7	9.2
No. 303 cylinder	3	5-9/16	.....	.....	10.3	11.0	.....	.....	9.8	10.5	.....	.....	.....	.....
No. 2	3-7/16	4-9/16	12.3	13.0	11.1	11.8	11.6	12.3	10.6	11.3	12.1	12.7	11.1	11.7
No. 2 1/2 glass	29.5 oz. avdp	.....	17.7	18.7	16.0	17.0	16.7	17.7	15.5	16.5	17.6	18.3	16.0	16.7
No. 2 1/2	4-1/16	4-11/16	18.0	19.0	16.2	17.2	17.0	18.0	15.7	16.7	17.8	18.5	16.2	16.9
No. 5 squat	6-3/16	4-8/16	41.5	43.0	37.5	39.0	39.5	41.0	36.5	38.0	41.0	42.0	37.0	38.0
No. 10	6-3/16	.....	.....	.....	.....	.....	.....	.....	.....	.....	63.1	64.5	58.0	60.2

Table III – Single Sampling Plan for Drained Weights

Sample size (number of sample units)	3	6	13	21	29	38	48	60	72
Acceptance No.	0	1	2	3	4	5	6	7	8

§52.2547 Recommended minimum fill weights.

- (a) **General.** The minimum fill weight recommendations specified in tables IV, V, VI, VII, VIII, and IX are not incorporated in the grades of the finished product since fill weight, as such, is not a factor of quality for the purposes of these grades.
- (b) **Method for ascertaining fill weights.** Fill weight is determined in accordance with the U.S. Standards for Inspection by Variables and the U.S. Standards for Determination of Fill Weights.
- (c) **Definitions of terms and symbols.**

Sampling allowance code means a code letter on the Sampling Allowance Chart of the U.S. Standards for Inspection by Variables. This letter identifies the appropriate line which gives the amount of sampling allowance to be applied to the specification average for fill weights in order to determine compliance with requirements for fill weight averages for a sample.

Subgroup means a group of sample units representing a portion of a sample.

\bar{X}'_{min} means the minimum lot average fill weight.

$LWL_{\bar{X}}$ means the lower warning limit for subgroup averages.

$LRL_{\bar{X}}$ means the lower reject limit for subgroup averages.

LWL means the lower warning limit for individual fill weight measurements.

LRL means the reject limit for individual fill weight measurements.

\bar{R}' means a specified average range value.

R_{max} means a specified maximum range for a subgroup.

- (d) **Compliance with recommended fill weights.** Compliance with the recommended fill weights shall be in accordance with the acceptance criteria specified in the U.S. Standards for Inspection by Variables and the U.S. Standards for Determination of Fill Weights.

Table IV – Recommended Fill Weight Values

Container designation (metal, unless otherwise designated)	Green and green tipped-spears, tips, or points (small, medium, large, or blends of these sizes)							
	\bar{X}'_{min}	$LWL_{\bar{X}}$	$LRL_{\bar{X}}$	LWL	LRL	\bar{R}'	R_{max}	Sampling Allowance Code
8 oz. glass	5.0	4.7	4.6	4.4	4.1	0.70	1.50	E
8Z short	4.6	4.3	4.2	4.0	3.7	0.70	1.50	E
8Z tall	5.1	4.8	4.7	4.5	4.2	0.70	1.50	E
No. 1 picnic	6.3	6.0	5.8	5.6	5.2	0.80	1.70	F
12Z	7.6	7.2	7.0	6.8	6.4	0.90	2.0	G
13 1/2Z glass	8.4	8.0	7.8	7.5	7.0	1.10	2.20	H
No. 300	8.8	8.4	8.2	7.9	7.4	1.10	2.20	H
300 x 409	9.1	8.7	8.5	8.2	7.7	1.10	2.20	H
No. 1 tall	9.6	9.1	8.9	8.6	8.1	1.20	2.50	I
No. 303 glass	9.9	9.4	9.2	8.9	8.4	1.20	2.50	I
No. 303	9.7	9.2	9.0	8.7	8.2	1.20	2.50	I
No. 300 cylinder	11.2	10.6	10.3	9.9	9.2	1.50	3.20	L
No. 2	12.0	11.4	11.1	10.7	10.0	1.50	3.20	L
No. 2 1/2 glass	17.4	16.5	16.1	15.5	14.5	2.20	4.70	R
No. 2 1/2	17.6	16.7	16.3	15.7	14.7	2.20	4.70	R
No. 5 squat	41.0	39.7	39.1	38.2	36.8	3.30	6.90	W

Table V – Recommended Fill Weight Values

Container designation (metal, unless otherwise designated)	Green and green tipped-spears, tips, or points (extra-large, colossal, giant, or blends of these sizes)							
	\bar{X}'_{min}	$LWL_{\bar{X}}$	$LRL_{\bar{X}}$	LWL	LRL	R'	R_{max}	Sampling allowance code
8 oz. glass	5.0	4.7	4.6	4.4	4.1	0.70	1.50	E
8Z short	4.6	4.3	4.2	4.0	3.7	0.70	1.50	E
8Z tall	5.1	4.8	4.7	4.5	4.2	0.70	1.50	E
No. 1 picnic	6.1	5.8	5.6	5.4	5.0	0.80	1.70	F
12Z	7.3	6.9	6.7	6.5	6.1	0.90	2.00	G
13 1/2Z glass	8.1	7.7	7.5	7.2	6.7	1.10	2.20	H
No. 300	8.6	8.2	8.0	7.7	7.2	1.10	2.20	H
300 x 409	8.8	8.4	8.2	7.9	7.4	1.10	2.20	H
No. 1 tall	9.3	8.8	8.6	8.3	7.8	1.20	2.50	I
No. 303 glass	9.2	8.7	8.5	8.2	7.7	1.20	2.50	I
No. 303	9.4	8.9	8.7	8.4	7.9	1.20	2.50	I
No. 300 cylinder	10.7	10.1	9.8	9.4	8.7	1.50	3.20	L
No. 2	11.6	11.0	10.7	10.3	9.6	1.50	3.20	L
No. 2 1/2 glass	16.9	16.0	15.6	15.0	14.0	2.20	4.70	R
No. 2 1/2	17.1	16.2	15.8	15.2	14.2	2.20	4.70	R
No. 5 squat	39.5	38.2	37.6	36.7	35.3	3.30	6.90	W

Table VI – Recommended Fill Weight Values

Container designation (metal, unless otherwise designated)	Green tipped and white; and white-spears, tips, or points (small, medium, large, or blends of these sizes)							
	\bar{X}'_{min}	$LWL_{\bar{X}}$	$LRL_{\bar{X}}$	LWL	LRL	R'	R_{max}	Sampling allowance code
8 oz. glass	5.2	4.9	4.8	4.6	4.3	0.70	1.50	E
8Z short	4.8	4.5	4.4	4.2	3.9	0.70	1.50	E
8Z tall	5.3	5.0	4.9	4.7	4.4	0.70	1.50	E
No. 1 picnic	7.1	6.8	6.6	6.4	6.0	0.80	1.70	F
12Z	7.9	7.5	7.3	7.1	6.7	0.90	2.00	G
13 1/2Z glass	9.2	8.8	8.6	8.3	7.8	1.10	2.20	H
No. 300	9.6	9.2	9.0	8.7	8.2	1.10	2.20	H
300 x 409	9.8	9.4	9.2	8.9	8.4	1.10	2.20	H
No. 1 tall	10.7	10.2	10.0	9.7	9.2	1.20	2.50	I
No. 303 glass	11.1	10.6	10.4	10.1	9.6	1.20	2.50	I
No. 303	10.9	10.4	10.2	9.9	9.4	1.20	2.50	I
No. 2	13.2	12.6	12.3	11.7	11.2	1.50	3.20	L
No. 2 1/2 glass	19.0	18.1	17.7	17.1	16.1	2.20	4.70	R
No. 2 1/2	19.3	18.4	18.0	17.4	16.4	2.20	4.70	R
No. 5 squat	44.5	43.2	42.6	41.7	40.3	3.30	6.90	W

Table VII – Recommended Fill Weight Values

Container designation (metal, unless otherwise designated)	Green tipped and white; and white-spears, tips, or points (extra-large, colossal, giant, or blends of these sizes)							
	\bar{X}'_{min}	$LWL_{\bar{X}}$	$LRL_{\bar{X}}$	LWL	LRL	\bar{R}'	R_{max}	Sampling allowance code
8 oz. glass	5.2	4.9	4.8	4.6	4.3	0.70	1.50	E
8Z short	4.8	4.5	4.4	4.2	3.9	0.70	1.50	E
8Z tall	5.3	5.0	4.9	4.7	4.4	0.70	1.50	E
No. 1 picnic	6.6	6.3	6.1	5.9	5.5	0.80	1.70	F
12Z	7.8	7.4	7.2	7.0	6.6	0.90	2.00	G
13 1/2Z glass	8.7	8.3	8.1	7.8	7.3	1.10	2.20	H
No. 300	9.1	8.7	8.5	8.2	7.7	1.10	2.20	H
300 x 409	9.4	9.0	8.8	8.5	8.0	1.10	2.20	H
No. 1 tall	10.1	9.6	9.4	9.1	8.6	1.20	2.50	I
No. 303 glass	10.5	10.0	9.8	9.5	9.0	1.20	2.50	I
No. 303	10.3	9.8	9.6	9.3	8.8	1.20	2.50	I
No. 2	12.5	11.9	11.5	11.2	10.5	1.50	3.20	L
No. 2 1/2 glass	18.0	17.1	16.7	16.1	15.1	2.20	4.70	R
No. 2 1/2	18.3	17.4	17.0	16.4	15.4	2.20	4.70	R
No. 5 squat	42.5	41.2	40.6	39.7	38.3	3.30	6.90	W

Table VIII – Recommended Fill Weight Values

Container designation (metal, unless otherwise designated)	Green-cut spears; bottom cuts; or cuts-tips removed							
	\bar{X}'_{min}	$LWL_{\bar{X}}$	$LRL_{\bar{X}}$	LWL	LRL	R'	R_{max}	Sampling allowance code
8 oz. glass	4.9	4.6	4.5	4.3	4.0	0.70	1.50	E
8Z short	4.5	4.2	4.1	3.9	3.6	0.70	1.50	E
8Z tall	5.0	4.7	4.6	4.4	4.1	0.70	1.50	E
No. 1 picnic	6.3	6.0	5.9	5.7	5.4	0.70	1.50	E
12Z	7.5	7.2	7.0	6.8	6.4	0.80	1.70	F
No. 300	8.9	8.5	8.3	8.1	7.7	0.90	2.00	G
300 x 409	9.1	8.7	8.5	8.3	7.9	0.90	2.00	G
No. 1 tall	9.4	9.0	8.8	8.5	8.0	1.10	2.20	H
No. 303 glass	9.7	9.3	9.1	8.8	8.3	1.10	2.20	H
No. 303	9.5	9.1	8.9	8.6	8.1	1.10	2.20	H
No. 2	12.0	11.5	11.3	11.0	10.5	1.20	2.50	I
No. 2 1/2 glass	17.3	16.7	16.4	16.0	15.4	1.40	3.00	K
No. 2 1/2	17.5	17.0	16.7	16.3	15.7	1.40	3.00	K
No. 5 squat	41.0	40.2	39.8	39.2	38.3	2.10	4.40	Q
No. 10	65.5	64.3	63.7	62.9	61.6	3.00	6.40	V

Table IX – Recommended Fill Weight Values

Container designation (metal, unless otherwise designated)	Green tipped and white-cut spears; bottom cuts; or cuts-tips removed							
	\bar{X}'_{min}	$LWL_{\bar{X}}$	$LRL_{\bar{X}}$	LWL	LRL	\bar{R}'	R_{max}	Sampling allowance code
8 oz. glass	5.3	5.0	4.9	4.7	4.4	0.70	1.50	E
8Z short	4.8	4.5	4.4	4.2	3.9	0.70	1.50	E
8Z tall	5.4	5.1	5.0	4.8	4.5	0.70	1.50	E
No. 1 picnic	6.8	6.5	6.4	6.2	5.9	0.70	1.50	E
12Z	8.0	7.7	7.5	7.3	6.9	0.80	1.70	F
No. 300	9.4	9.0	8.8	8.6	8.2	0.90	2.00	G
300 x 409	9.6	9.2	9.0	8.8	8.4	0.90	2.00	G
No. 1 tall	9.9	9.5	9.3	9.0	8.5	1.10	2.20	H
No. 303 glass	10.2	9.8	9.6	9.3	8.8	1.10	2.20	H
No. 303	10.0	9.6	9.4	9.1	8.6	1.10	2.20	H
No. 2	13.0	12.5	12.3	12.0	11.5	1.20	2.50	I
No. 2 1/2 glass	18.8	18.3	18.0	17.6	17.0	1.40	3.00	K
No. 2 1/2	19.0	18.5	18.2	17.8	17.2	1.40	3.00	K
No. 5 squat	44.5	43.7	43.3	42.7	41.8	2.10	4.40	Q
No. 10	71.0	69.8	69.2	68.4	67.1	3.00	6.40	V

§52.2548 Size (diameter) of spears, tips, and points.

The size (diameter) of asparagus spears, tips, and points in canned asparagus is determined by measuring the largest diameter across the base at right angles to the longitudinal axis of the unit. Units compressed in processing should be restored to their approximate original contour before sizing. Asparagus spears longer than 5 inches are measured at a point 5 inches from the top of the spear. Units 5 inches in length and less are measured at the base or largest cut end of the unit.

§52.2549 Compliance with single size recommendations.

Canned asparagus spears, tips, and points will be considered as meeting a designated size when not more than 20 percent, by count, of all the units are of the next size smaller or the next size larger than the diameter range of the particular size designation.

Table X

Sizes (Diameter) of Asparagus Spears, Tips, and Points in Canned Asparagus	
Word designation:	Diameter (16ths of inch)
Small	6/16 and less
Medium	Over 6/16 to 8/16
Large	Over 8/16 to 10/16
Extra-large or mammoth	Over 10/16 to 13/16
Colossal	Over 13/16 to 16/16
Giant	Over 16/16
Blend of sizes	A mixture of 2 or more of the foregoing sizes

Factors of Quality

§52.2550 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) Factor not rated by score points.

- (i)** Flavor.

(2) Factors rated by score points.

- (i)** 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 each such factor is:

Factors:	Points
Liquor	10
Color	20
Defects	30
Character	40
Total Score	100

- (ii)** **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.
- (iii)** **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.

§52.2551 Ascertaining the rating for the factors which are scored.

The essential variations within each factor which is rated by score points are so described that the value may be ascertained for such factors and expressed numerically. The numerical range within each such factor is inclusive (for example, 17 to 20 points means 17, 18, 19, or 20 points).

§52.2552 Liquor.

- (a)** **“A” classification.** Canned asparagus that possesses clear liquor may be given a score of 9 or 10 points.

Clear liquor means that the liquor may possess a typical yellow or green color and is fairly free from suspended material and sediment.

- (b)** **“C” classification.** If the canned asparagus possesses fairly clear liquor a score of 7 or 8 points may be given.

Fairly clear liquor means that the liquor may be cloudy but not excessively cloudy or may possess an accumulation of sediment which may be slightly gray or slightly brown but is not seriously objectionable and is not off color.

- (c) **“SStd” classification.** Canned asparagus that fails to meet the requirements of paragraph (b) of this section may be given a score of 0 to 6 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.2553 Color.

- (a) **General.** The color of asparagus in canned asparagus is based on the type and style of asparagus and the characteristic and predominant color of the units.
- (b) **“A” classification.** Canned asparagus that possesses a good color may be given a score of 17 to 20 points.

Good color has the following meaning with respect to the following types and styles of canned asparagus:

(1) **Spears, tips, or points.**

- (i) **Green.** The units possess a good, characteristic, green, light green, or yellowish green color typical of well-developed asparagus, and the bottom portion of not more than 10 percent, by count, of the units, or one unit, whichever is larger, may possess typical white or yellowish white color not to exceed one-eighth of the length of the unit.
- (ii) **Green tipped.** The units possess a good, characteristic, green, light green, or yellowish green color with typical white or yellowish white color at the base ends, typical of well-developed asparagus, and not more than 20 percent, by count, of the units may possess typical white or yellowish white color in excess of one-half of the length of the unit or may be all green.
- (iii) **Green tipped and white.** The units possess a good, characteristic, white or yellowish white color, and may possess green, light green, or yellowish green heads and adjacent areas typical of well-developed asparagus, and not more than 20 percent, by count, of the units may possess green, light green, or yellowish green heads and adjacent areas exceeding one-half of the length of the unit.

- (iv) **White.** The units possess a good, characteristic, white, or yellowish white color typical of well-developed asparagus, and not more than 10 percent, by count, of the units, or one unit, whichever is larger, may possess green, light green, or yellowish green heads and adjacent areas not to exceed one-half of the length of the unit.

(2) **Cut spears, bottom cuts or cuts-tips removed, and mixed.**

- (i) **Green.** The units possess a good, characteristic, green, light green, or yellowish green color typical of well-developed asparagus, and not more than 10 percent, by count, of the units may be green and white or white: *Provided*, That not more than 2 percent, by count, of all the units may be white.
- (ii) **Green tipped and white or white.** The units possess a good, characteristic color typical of well-developed green tipped and white or white asparagus.

- (c) **“C” classification.** If the canned asparagus possesses a fairly good color, a score of 14 to 16 points may be given.

Fairly good color has the following meanings with respect to the following types and styles of canned asparagus:

(1) **Spears, tips, or points.**

- (i) **Green.** The units possess a fairly good, characteristic, green, light green, or yellowish green color typical of fairly well developed asparagus and the bottom portion of not more than 20 percent, by count, of the units may possess typical white or yellowish white color not to exceed one-fourth of the length of the unit.
- (ii) **Green tipped.** The units possess a fairly good, characteristic, green, light green, or yellowish green color with typical white or yellowish white color at the base ends, typical of fairly well developed asparagus, and not more than 50 percent, by count, of the units may possess typical white or yellowish white color in excess of one-half of the length of the unit, or may be all green.
- (iii) **Green tipped and white.** The units possess a fairly good characteristic, white or yellowish white color and may possess green, light green, or yellowish green heads and adjacent areas typical of fairly well developed asparagus, and not more than 50 percent, by count, of the units may possess green, light green, or yellowish green heads and adjacent areas in excess of one-half of the length of the unit.

(iv) **White.** The units possess a fairly good, characteristic, white or yellowish white color typical of fairly well developed white asparagus, and not more than 20 percent, by count, of the units may possess green, light green, or yellowish green heads and adjacent areas not to exceed one-half of the length of the unit.

(2) **Cut spears, bottom cuts or cuts-tips removed, and mixed.**

(i) **Green.** The units possess a fairly good, characteristic, green, light green, or yellowish green color typical of fairly well developed asparagus and not more than 20 percent, by count, of the units may be green and white or white: *Provided*, That not more than 5 percent, by count, of all the units may be white.

(ii) **Green tipped and white or white.** The units possess a fairly good, characteristic color typical of fairly well developed green tipped and white or white asparagus.

(d) **“SStd” classification.** Canned asparagus that fails to meet the requirements of paragraph (c) of this section or is definitely off color 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).

§52.2554 Defects.

(a) **General.** The factor of defects refers to the degree of freedom from grit or silt, loose material, shattered heads, poorly cut units, damaged units, and seriously damaged units.

(1) **Grit or silt** means sand or any other particle of earthy material.

(2) **Loose material** means shattered asparagus material and cut or broken pieces which are less than three-eighths inch in length.

(3) **Shattered head** means any unit with the asparagus head broken or shattered to the extent that the appearance is seriously affected.

(4) **Misshapen** means any spear, tip, or point that is badly crooked, or any unit that is seriously affected in appearance by doubles or other malformations.

(5) **Poorly cut** means a unit that has a very ragged, stringy, or frayed edge or edges, or a unit that is partially cut, or is cut at an angle of less than approximately 45 degrees.

(6) **Damaged** means damaged by discoloration, mechanical injury, or damaged by other means to the extent that the appearance or edibility of the unit is materially affected.

(7) **Seriously damaged** means damaged to such an extent that the appearance or edibility of the unit is seriously affected.

(b) **“A” classification.** Canned asparagus that is practically free from defects may be given a score of 25 to 30 points.

Practically free from defects means that no grit or silt may be present that affects the appearance or edibility of the product; that loose material may be present that does not materially affect the appearance of the product; and that with respect to the following styles of canned asparagus:

(1) **Spears, tips, and points.** There may be present with respect to green and green tipped types not more than 10 percent, and with respect to green tipped and white types not more than 15 percent, by count, of units with shattered heads, misshapen units and poorly cut units, and damaged and seriously damaged units: *Provided*, That not more than 3 percent, by count, of the units may be seriously damaged, or one unit in a single container may be seriously damaged if such unit exceeds the allowance of 3 percent: *Provided*, That in all of the containers comprising the sample such damaged units do not exceed an average of 3 percent, by count, of the total number of units.

(2) **Cut spears, bottom cuts or cuts-tips removed, and mixed.** There may be present for the applicable style not more than 10 percent, by count, of units with shattered heads, misshapen units and poorly cut units, and damaged and seriously damaged units: *Provided*, That not more than 2 percent, by count, of the units may be seriously damaged or one unit in a single container may be seriously damaged if such unit exceeds the allowance of 2 percent: *Provided*, That in all of the containers comprising the sample such damaged units do not exceed an average of 2 percent, by count, of the total number of units.

(c) **“C” classification.** If the canned asparagus is fairly free from defects, a score of 21 to 24 points may be given. Canned asparagus that falls 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 free from defects means that not more than a trace of grit or silt may be present that affects the appearance or edibility of the product; that loose material may be present that does not seriously affect the appearance of the product; and that with respect to the following styles of canned asparagus:

- (1) **Spears, tips, and points.** There may be present with respect to green and green tipped types not more than 20 percent, and with respect to green tipped and white types not more than 30 percent, by count, of units with shattered heads, misshapen units and poorly cut units, and damaged and seriously damaged units: *Provided*, That not more than 10 percent, by count, of the units may be seriously damaged, or one unit in a single container may be seriously damaged if such unit exceeds the allowance of 10 percent: *Provided*, That in all of the containers comprising the sample such damaged units do not exceed an average of 10 percent, by count, of the total number of units.
 - (2) **Cut spears, bottom cuts or cuts-tips removed, and mixed.** There may be present for the applicable style not more than 20 percent, by count, of units with shattered heads, misshapen units and poorly cut units, and damaged and seriously damaged units: *Provided*, That not more than 7 percent, buy count, of all the units may be seriously damaged.
- (d) **“SStd” classification.** Canned asparagus that fails to meet the requirements of paragraph (c) of this section may be given a score of 0 to 20 points and shall not be graded above substandard, regardless of the total score for the product (this is a limiting rule).

§52.2555 Character.

- (a) **General.** The factor of character refers to the degree of development of the head and bracts and to the tenderness and texture of the unit.
 - (1) **Well developed** means that the appearance of the head is not materially affected by a seedy appearance, and is practically compact.
 - (2) **Fairly well developed** means that the head may show a seedy appearance over the surface of the head and the head and bracts may be elongated but not so developed or elongated as to give a definitely spread or branching appearance.
- (b) **“A” classification.** Canned asparagus that possesses a good character may be given a score of 34 to 40 points.

Good character has the following meanings with respect to the following styles and types of canned asparagus:

- (1) **Spears, tips, and points.** Not less than 85 percent, by count, of the heads are well developed, and the remaining units are at least fairly well developed, and with respect to green and green tipped types not more than 10 percent, and with respect to green tipped and white and white

types not more than 20 percent, by count, of the units, or one unit in a container if such unit exceeds the allowances provided for the respective type, may be tough.

- (2) **Cut spears and mixed.** Not less than 50 percent, by count, of the heads are well developed, and the remainder are at least fairly well developed, and with respect to green and green tipped types not more than 10 percent, and with respect to green tipped and white and white types not more than 20 percent, by count, of the units may be tough.
 - (3) **Bottom cuts or cuts-tips removed.** With respect to green and green tipped types not more than 10 percent, and with respect to green tipped and white and white types not more than 33-1/3 percent, by count, of the units may be tough.
- (c) **“C” classification.** If the canned asparagus possesses a fairly good character, a score of 28 to 33 points may be given. Canned asparagus that falls 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 good character has the following meanings with respect to the following styles and types of canned asparagus:

- (1) **Spears, tips, and points.** Not less than 90 percent, by count, of the heads are at least fairly well developed, and the remaining units may fail to meet the requirements for well-developed heads, and with respect to green and green tipped types not more than 25 percent, and with respect to green tipped and white and white types not more than 50 percent, by count, of the units, may be tough.
 - (2) **Cut spears and mixed.** Not less than 90 percent, by count, of the heads are at least fairly well developed, and the remainder may fail to meet the requirements for fairly well developed heads, and with respect to green and green tipped types not more than 25 percent, and with respect to green tipped and white and white types not more than 50 percent, by count, of the units may be tough.
 - (3) **Bottom cuts or cuts-tips removed.** With respect to green and green tipped types not more than 25 percent, and with respect to green tipped and white and white types not more than 50 percent, by count, of the units may be tough.
- (d) **“SStd” classification.** Canned asparagus that fails 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).

Definitions and Explanations

§52.2556 Definitions and explanations of terms.

- (a) **Head.** Head in cut spears means the tip end which has been cut from an asparagus shoot which is 5/8 inch or more in length with respect to the green type and which is 3/8 inch or more in length with respect to green tipped and white and white types, or the upper portion of a spear which possesses a substantial amount of head material which has been cut from near the tip end and which is approximately the same length as the other cut units.
- (b) **Unit.** Unit means any individual portion of an asparagus shoot 3/8 inch or more in length in canned asparagus.
- (c) **Percent, by count, of heads.** Percent, by count, of heads means the percent determined by averaging the percent, by count, of heads in all of the containers comprising the sample.
- (d) **Tough unit.**
 - (1) **Spears, tips, and points.** Tough unit means a unit which is not cut through in 5 seconds or less when tested by means of the fiberometer and which possesses fibrous material which is materially objectionable upon eating. When tested by means of the fiberometer the test is made at a point 1 inch from the cut end with respect to the green type and at a point 1-1/2 inches from the cut end with respect to the green tipped type, and at the midpoint of the unit with respect to the green tipped and white and white types.
 - (2) **Cut spears, bottom cuts or cuts-tips removed, and mixed; containing cut spears and bottom cuts or cuts-tips removed.** Tough unit means a unit which possesses fibrous material which is materially objectionable upon eating.
- (e) **Asparagus fiberometer.** The cutting wire of the fiberometer shall be 0.031 inches in diameter stainless steel wire and is mounted in a metal frame having an overall weight of 3 pound avoirdupois. The slots in the block supporting the asparagus unit to be tested shall be not less than 0.039 inches nor more than 0.042 inches in width.

Lot Inspection and Certification

§52.2557 Ascertaining the grade of a lot.

The grade of a lot of canned asparagus 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
§52.2558 Score Sheet for canned asparagus.

Number, size, and kind of container			
Container marks or identification			
Label			
Net weight (ounces)			
Vacuum (inches)			
Drained weight (ounces)			
Type			
Style			
Size or sizes (Spears, tips, and points)			
Length of cut			
Heads (cut) (percent, by count)			
Factors		Grade	Score Points
Liquor	10	"A"	9-10
		"C"	7-8
		"SStd"	0-6 ¹
Color	20	"A"	17-20
		"C"	14-16
		"SStd"	0-13 ¹
Defects	30	"A"	25-30
		"C"	21-24 ¹
		"SStd"	0-20 ¹
Character	40	"A"	34-40
		"C"	28-33 ¹
		"SStd"	0-27 ¹
Total Score		100	
Flavor (A, C, or SStd)			
U.S. Grade			

¹ Indicates limiting rule.