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Marketing and
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Programs

Frozen Mixed Vegetables

Agricultural
Marketing
Service

Inspection Instructions

Specialty
Crops
Program

February 2016

Specialty
Crops
Inspection
Division

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These instructions contain information and guidelines to help personnel of the U.S. Department of Agriculture's (USDA) Specialty Crops Inspection (SCI) Division uniformly apply and interpret U.S. grade standards, other similar specifications, and special procedures.

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Inspection instructions are issued by USDA after careful consideration of all data and views submitted. The Department welcomes suggestions for improving the inspection instructions in future revisions.

Comments may be submitted to:

Director, Specialty Crops Inspection Division
Specialty Crops Program
USDA, Agricultural Marketing Service
1400 Independence Avenue, SW, STOP 0240
Washington, DC 20250

These instructions replace the Grading Manual for Frozen Mixed Vegetables dated February 1953, and include, but not limited to, all previous correspondence, memos, inspection instructions, or procedures.

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INSPECTION INSTRUCTIONS FOR FROZEN MIXED VEGETABLES

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GENERAL

The [United States Standards for Grades of Frozen Mixed Vegetables](#) is a Variables Standard. In a variables standard the number of defective sample units (deviants) allowed for a given sample size is referred to as the acceptance number (or the deviant rate). Variables standards use acceptance numbers of: 0 deviants in 3, 1 deviant in 6, 2 deviants in 13, 3 deviants in 21, and 4 deviants in 29 samples. Sampling plans and deviant rates for frozen mixed vegetables are provided in the [AIM Sampling Manual](#).

The grade of frozen mixed vegetables may be determined by considering, in conjunction with the requirements of the respective grade, the respective ratings for the factors of color, absence of defects, and character.

The relative importance of each scoring factor is expressed numerically on the scale of 100. The maximum number of points that may be given each factor is:

Factors:	Points
Color	20
Absence of defects	40
Character	40
Total Score	100

PRODUCT DESCRIPTION

Frozen mixed vegetables are defined in the [U.S. Standards for Grades of Frozen Mixed Vegetables](#) as consisting of three or more succulent vegetables, properly prepared and properly blanched; may contain vegetables (such as, small pieces of sweet red peppers or sweet green peppers) added as garnish; and are frozen and maintained at temperatures necessary for the preservation of the product.

These instructions do not cover:

- A combination of two vegetables, such as frozen diced carrots and peas;
- A mixture containing any basic vegetable that has been previously canned, such as canned whole-kernel corn;
- Any mixture containing dried lima beans or dried peas, whether or not prepared by soaking.

Mixes covered by these instructions may contain vegetables of a colorful and palatable nature, such as small pieces of sweet red peppers or sweet green peppers, added as garnish. These vegetable materials may or may not have been previously canned. Some vegetables, such as okra or onions, are not considered suitable garnishing ingredients for a product of frozen mixed vegetables.

RECOMMENDED KINDS AND STYLES OF BASIC VEGETABLES

All vegetables in the mixture other than small pieces of vegetables added for garnish are considered basic vegetables. In accordance with the U.S. Standards, compute percentages of vegetables based on basic vegetables, exclusive of garnish. The basic vegetables of the varietal types and styles in the U.S. Standards are:

- Green (or Wax) beans: Cut styles, predominantly of 1/2 inch to 1-1/2 inch cuts;
- Lima Beans: Any single varietal type;
- Carrots: Diced style, predominantly of 3/8 inch to 1/2 inch cubes;
- Corn: Golden (or Yellow) in whole kernel style; and
- Peas: Early type or sweet type.

Special certification is required if any of the basic vegetables deviate from the recommended varietal types and styles. For example, if the frozen mixed vegetables do not meet the recommendations with respect to kinds (including color and varietal types) and styles (including size or lengths), the product is certified as follows depending on whether each of the grading factors can be determined on the vegetables which do not meet the recommendations. When it is possible to make a determination, record the kind and style of the ingredients and show failure to meet recommendations in connection with the grade statement.

Examples:

In the body of the certificate

Ingredients

Ingredients:

Cut Green Beans (Flat Type), approximately 2 inch cuts
Lima Beans
Whole Kernel White Corn
Early type Peas

In the Grade statement

GRADE:

U.S. GRADE B

Average score 84 points

Product does not conform with kinds and style of cut green beans and corn.

When it is not possible to make a determination on all of the vegetables, describe the kind, style, and quality of the ingredients that do not meet the requirements.

Examples:

In the body of the certificate

Ingredients

Ingredients:

Lima Beans

Diced Carrots

Whole Kernel Golden Corn

Soy Beans (Reasonably uniform green color; practically free from defects, reasonably tender)

In the Grade statement

GRADE:

No Applicable U.S. Standards for Grades for this product. Based on factors in the U.S. Standards for Grades of Frozen Mixed vegetables, all vegetables (except soy beans, not recommended in the standards) meet requirements for U.S GRADE B.

FAILURE TO COMPLY WITH DEFINITION

If the product is alleged to be frozen mixed vegetables (either by label or other statement) but conflicts, either expressly or by implication, in some respects with the introductory paragraph in the U.S. Standards for Grades of Frozen Mixed Vegetables, certify on a descriptive basis. Show any pertinent facts in the body of the certificate and in connection with the Grade statements.

Examples:

Product known by inspector to have been prepared in part from a canned or non-succulent vegetable but would meet quality requirements for either Grade A or B frozen mixed vegetables.

In body of certificate

Ingredients:
Lima Beans
Diced Carrots
Canned Whole-Kernel Golden Corn
Sweet type peas

Grade statement

GRADE:

No Applicable U.S. Standards for Grades for this product.
See above for descriptive factors based on applicable factors outlined in the U.S. Standards for Grades of Frozen Mixed Vegetables.

Examples:

Label statement or other evidence indicates a non-succulent vegetable used in mixture and quality of any or all vegetables would not meet the quality requirement for either Grade A or B frozen mixed vegetables.

In body of certificate

Ingredients:
Soaked Dried Lima Beans (see label statement above)
Canned Diced Carrots (equivalent of U.S. Grade C Canned Carrots)
Sweet type peas (equivalent of U.S. Grade B frozen peas)

Grade statement

GRADE:

No Applicable U.S. Standards for Grades for this product.

See the [AIM Inspection Series Certification Manual](#) for additional guidance.

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RECOMMENDED PROPORTIONS OF INGREDIENTS

The U.S. Standards outline the recommended proportions for frozen mixed vegetables containing three, four, or five basic vegetables. In the three-vegetable mixture, the minimum for any single vegetable is 20 percent. In the four-or five-vegetable mixtures, the minimum for any single vegetable is 8 percent. These minimum recommendations, together with the maximum recommendations, make various proportions possible.

See table below.

3 Vegetables (max. 40%)			
Example 1	Example 2	Example 3	Example 4
40%	30%	30%	35%
40%	30%	35%	25%
20%	40%	35%	40%
4 Vegetables (min. 8%, max. 35%)			
Example 1	Example 2	Example 3	Example 4
35%	30%	30%	35%
35%	30%	30%	30%
22%	32%	30%	25%
8%	8%	10%	10%
5 Vegetables (min. 8%, max. 30%)			
Example 1	Example 2	Example 3	Example 4
30%	25%	20%	30%
30%	25%	20%	30%
24%	25%	20%	20%
8%	15%	20%	10%
8%	10%	20%	10%

If any of the basic vegetables deviate from the minimum and maximum amounts for the number of vegetables in the mixture, special certification is required.

If the frozen mixed vegetables meet the proportions recommended in the U.S. Standards, do not show the exact analysis as to percentage of ingredients unless specifically requested. If the frozen mixed vegetables fail to meet the recommended proportions do not show the exact analysis as to percentage of ingredients on the certificate unless specifically requested, but show failure to meet recommendations and the reason in connection with the grade statement.

Example:

GRADE:
U.S. GRADE A
Average Score 90 points
Does not conform with recommended proportion of ingredients.

B Grade Statement

The grade statements are similar to those for other frozen vegetables, except for the instances mentioned in these instructions.

DISSIMILAR VARIETAL CHARACTERISTICS

If, within a single container, any basic vegetable is not of similar varietal characteristic, such container is automatically Substandard. In officially drawn samples, if more than an occasional container is Substandard on account of dissimilar varietal characteristics of a basic vegetable (or vegetables), the lot as a whole is Substandard. Any differences as to the varietal differences are shown in the body of the certificate.

Example:

In body of certificate, showing list of ingredients

Ingredients:
Cut Green Beans (Round Type) – approx. 1 inch cuts
Lima beans (3 packages: Mixed Thin seeded and Thick seeded types)
(23 packages: Thick seeded type)
Diced carrots
Whole kernel corn
Sweet type peas

Grade statement

GRADE:
23 packages U.S. Grade B
Score – 81 to 87 points
3 packages SUBSTANDARD only account of dissimilar varietal characteristics of lima beans.
Lot as a whole - SUBSTANDARD

Example:

If, from package to package in a single inspection, a basic vegetable has different varietal characteristics, the differences are shown in the body of the certificate in connection with the statement of ingredients but the product is not graded SUBSTANDARD for that reason as is the case shown in the example below.

In body of certificate

Ingredients:	
Beans	(1 package: Cut wax beans, approx. ¾ inch cuts) (8 packages: Cut green beans, approx. 1 inch cuts)
Lima beans	(2 cartons: Thick seeded type) (6 cartons: Thin seeded type)

See the [AIM Inspection Series Certification Manual](#) for additional instructions.

INSPECTION AND GRADING

EQUIPMENT, INSPECTION AIDS, AND INSTRUCTIONS

- [U.S. Standards for Grades of Frozen Mixed Vegetables](#);
- AIM Inspection Series Manuals:
 - [Certification Manual](#);
 - [Condition of Food Container Manual](#);
 - [Foreign Material Manual](#);
 - [General Procedures Manual](#);
 - [Safety Manual](#);
 - [Sampling Manual](#);
 - [Sanitation Manual](#); and
 - [Technical Procedures Manual](#);
- [FDA Defect Action Level Handbook](#);
- Though not specifically identified in the [U.S. Food and Drug Administration's \(FDA\) Defect Action Levels, FDA's Macroanalytical Procedures Manual \(MPM\)-V104](#) provides instructions for green and wax beans, lima (butter) beans, peas, cowpeas, black-eyed peas, and field peas in frozen and canned (fresh and canned dry) styles;
- [U.S. Standards for Grades of commodities used in mix](#); and
- [FV 364-103 Score Sheet for Frozen Mixed Vegetables](#) (intranet link).
- Trays:
 - White shallow laboratory trays for retail-size packages,
 - White, deep, large-size laboratory trays for segregating and compositing each basic vegetable or for large-size packages;

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- Grading equipment and supplies for the specific commodities in the mixture.

SAMPLE UNIT SIZE

Uniformity in the preparation and performance of sampling procedures are a fundamental part of Division services. The [AIM Sampling Manual](#) sections on Sampling Procedure, and Sampling Rate (Table II) provide guidance on the procedures used in sampling frozen mixed vegetables. Lot size and container size determine sampling rates.

The U.S. standards for frozen mixed vegetables state a sample size for the determination of harmless extraneous vegetable material of 16 ounces, or the entire container if less than 16 ounces.

LOT INSPECTION

Use the entire contents of the container. When sampling large containers, the sampling rate is based on overall weight, and is contained in the [AIM Sampling Manual](#), and the Regulations, 7 CFR 52.38 (which may be found at the following internet address: <http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>).

Inspection data should be recorded on the [FV 364-103E, score sheet for Frozen Mixed Vegetables](#) (Intranet link). The score sheet records detailed information about the findings in samples of frozen mixed vegetables. The score sheet is to be used for all lot inspections and for in-plant inspections. Additional instructions on completing score sheets may be found in the [AIM General Procedures Manual](#) in the Score Sheet/Tally Sheet Completion section.

TEMPERATURE AND CARE OF FROZEN PRODUCT

As a prerequisite to assigning the grade to frozen mixed vegetables, the U.S. standards for frozen mixed vegetables state: “frozen and maintained at temperatures necessary for the preservation of the product.”

Interpretive guidance on this statement is found in the Verification of Frozen Sample Units section of the [AIM Technical Procedures Manual](#).

Record code or case markings, type of packaging, and net weights on the score sheet. Before inspecting frozen mixed vegetables, familiarize yourself with the characteristics of the vegetables as outlined in the inspection instructions and the [U.S. Standards for each of the frozen vegetables](#) in the mixture.

Any Division instructions of a general nature that apply to frozen vegetables normally apply to the product of frozen mixed vegetables. For example, the [AIM General Procedures Manual](#) instructions on Alien Vegetables would apply if diced turnips were

found in diced carrots, lima beans in speckled butter beans, or any other vegetable that was included in the mixed vegetable, but was not intended to be part of the mix.

SIMILAR VARIETAL CHARACTERISTICS

Each of the basic vegetables must share similar varietal characteristics in order to be graded. Examples of failing to meet this requirement would be the presence, even in a single package, of the following:

- Fordhook and Henderson-Bush (or other thin-seeded varieties) Lima beans;
- Sweet type peas and Early type peas; or
- Green and Wax beans.

Containers that have dissimilar varietal characteristics for any basic vegetable should be recorded for certification.

If the varietal characteristics of a basic vegetable differ from package to package, the difference should be recorded for certification. An example would be a single inspection of 8 packages, of which 2 packages contained lima beans of the Fordhook type and the other 6 packages had Henderson-Bush type lima beans.

DETERMINE GRADE AND OTHER CONDITIONS

Use the following method to determine the grade and other conditions:

1. Thaw each package of 16 ounces or less under warm running water in a sealed container, or at room temperature, preferably in an unopened container, to permit handling the vegetables as individual units. If containers are larger than 16 ounces, take a representative sub-sample of approximately 16 to 20 ounces from each package and air thaw, or place each sub-sample in a moisture-proof bag and thaw under warm running water. You may divide the contents of the entire package until the required size subsample is obtained.
2. Spread each sample of the thawed mixed vegetables evenly on the grading trays for inspection. Record the kind, style, size, and varietal characteristics, as applicable, for the basic vegetables in the mixture.
3. Record any factors or conditions such as, but not limited to:
 - Dissimilar varietal characteristics of any of the basic vegetables:
 - Kind and size of pieces of garnish, if present;

- Abnormal texture or abnormal condition of any vegetable;
 - Abnormal odors upon opening package;
 - Any evidence of dehydration in any basic vegetables;
 - Any specks or dirt or other contaminant; and
 - Make note of any frozen masses of individual vegetables, such as large chunks of frozen corn. This may be used for certification purposes if the condition is serious.
4. When opening the package, set aside any individual samples that possess abnormal odors for further review.
 5. Determine the rating for scoring factors in the following order:
 - Color,
 - Absence of Defects, and
 - Character (prior to cooking).
 6. [Determine proportion of ingredients](#) on a composite basis from all of the samples as outlined in the United States Standards for Grades of Frozen Mixed Vegetables and these instructions under the section “[Determining the Proportion of Ingredients.](#)”
 7. Select at least two sub-samples of 8 ounces to 10 ounces each from the composite mixture to be cooked. Cook the samples in gently boiling water for 18 minutes from the time the water reaches the boiling point.

Additional information on cook methods for frozen mixed vegetables may be found in the [AIM Technical Procedures Manual](#), Cooking Procedures section.
 8. After cooking, check the composite samples of the cooked mixed vegetables as a combination for tenderness and texture (character), and for flavor and odor.
 9. Cook separately the samples previously set aside because of abnormal odors. Check each of the cooked samples for odor.

QUALITY FACTORS

COLOR

The overall color of the mixed vegetables immediately after thawing is determined in relation to the brightness and characteristic color of the vegetables as a mass. If any individual vegetable, or if the mixture of vegetables, are off-color for any reason, the product is Substandard.

If lima beans are present in the mixture, their color hue is considered on a separate basis, according to the percentages of green, lighter than green, and white as these color terms are defined in the U.S. Standards for Grades of Frozen Mixed Vegetables.

Any slightly spotted or slightly discolored lima beans or peas, when present in substantial amounts, are considered under the overall factor of color, whether or not some units may also be considered as defects.

GRADE A COLOR

In Grade A, none of the basic vegetables may be dull or characteristic of vegetables of advanced maturity or of improper blanching or freezing. Even varietal characteristics of a basic vegetable may be cause to consider the product as not complying with the brightness for a Grade A color. An example of this would be a predominance of green beans of such variety that their dull, grey-green color would diminish the overall brightness of the mixture.

Any garnish that is present may be only reasonably bright, as in sweet peppers that have been previously brined or canned.

GRADE B COLOR

In Grade B, the combined basic vegetables as a mass and the individual basic vegetables need to be reasonably bright and characteristic of reasonably young or reasonably tender vegetables that have been properly prepared and processed.

This color requirement is intended to be the approximate equivalent of color that reflects Grade B character or maturity for the respective vegetables.

Any garnish that is present may be only fairly bright or dull or lacking luster, but not discolored, such as a definite brownish cast in red sweet peppers.

GRADE C COLOR

In Grade C, considerable flexibility is permitted in the color factor since the overall color and the individual basic vegetables need only be fairly bright and characteristic of

properly prepared and properly processed mixed vegetables. This does not permit any definite off-color of the mass or of any of the individual vegetables.

Any garnish that is present may be only fairly bright, dull, or lacking luster, but not discolored, such as, a definite brownish cast in red sweet peppers.

SUMMARY OF COLOR REQUIREMENTS

Grade and Score	All basic vegetables, including Lima beans if present	Lima Beans	
		Thin-seeded (skins off) Thick-seeded Baby Potato Type (skins on)	Thick-seeded Type (Skins on)
A 18-20	Good — bright and characteristic of young or tender vegetables	90% or more green; balance lighter or white or combinations thereof	85% or more green; balance lighter; but no more than 5% white
B ¹ 16-17	Reasonably good—reasonably bright, characteristic of reasonably young or reasonably tender vegetables	65% or more green; balance lighter or white, or combinations thereof	60% or more green; balance lighter; but no more than 5% white
C ² 14-15	Fairly good—fairly bright, characteristic of properly prepared and properly processed vegetables	More than 35% are lighter than green, including white	More than 40% are lighter than green but no more than 20% white

¹ Frozen mixed vegetables that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score.

² Frozen mixed vegetables that fall into this classification shall not be graded above U.S. Grade C regardless of the total score.

DEFECTS

After determining the rating for color, segregate any defects into the groups shown below in accordance with the definitions outlined in the U.S. Standards for Grades of Frozen Mixed Vegetables.

DAMAGED UNITS

Determine the degree to which slightly damaged, moderately damaged, and seriously damaged units, either singly or in combination, affect the appearance or edibility, or both, of the sample. Slightly damaged units, are considered as defects only when they, singly or in combination with any moderately damaged or seriously damaged units, affect the appearance or edibility of the sample. Segregate the moderately damaged units and the seriously damaged units for use in determining in which scoring category to classify the sample.

In moderately damaged units and seriously damaged units, references to damage as pathological and insect injury have been omitted from the standards. Damage by scars, pathological injury, or insect injury are scoreable in the category of damaged by other means or damaged by other similar injury, provided such defects are not serious enough to be considered, in whole or in part, as a filthy, putrid, or decomposed substance, or are otherwise inedible as a food. Any defect, singly or in combination that may render the product as “Grade Not Certified” is not to be included in the percentage tolerances in the grade classifications.

HARMLESS EXTRANEEOUS MATERIAL

For each container or sub-sample, determine the number of large pieces present and, if they are heavy or excessively large, weigh the combined harmless extraneous material. The maximum allowances in grams (based on 1/2% of net weight) for common retail-size containers up to 16 ounces are shown in the chart summarizing the defect allowances.

OTHER DEFECTS

Other defects that are not defined are scoreable on the basis of the degree to which the appearance of the sample is affected. An example would be the presence of carrot units that are predominantly not normal diced units, or the presence of more than an occasional un-stemmed unit (but not tough and woody stem) of green beans in the mixture.

SCORING DEFECTS

Because of the variations in defects that may be found in frozen vegetables, the score is assigned by using the maximum allowances (shown in the summary which follows) for each classification.

The number of moderately or seriously damaged units permitted in packages of 10 ounces, 12 ounces, or 16 ounces in Grade A, Grade B, and Grade C are also included for reference.

Example: If a 12-ounce package contains 9 moderately damaged and 3 seriously damaged units (for a total of 12, including no more than 3 seriously damaged), and an insignificant amount of other defects, the score would be 37 points. In addition, if there is 1 small piece of harmless extraneous material, the score would be 36 points.

SUMMARY OF ALLOWANCES FOR DEFECTS AND DEFECTIVE UNITS

Grade and Score	HARMLESS EXTRANEOUS MATERIAL Per 16 oz. or per package if less than 16 oz.	DAMAGED UNITS		OTHER DEFECTS
		MAXIMUM TOTAL Moderately and Seriously Damaged & Per Package (Pkg.) Limits on seriously	Effect of Damaged Units on Grade	Effect of loose skins, loose seeds, crushed, ragged, broken, smaller irregular, etc.
A 36-40	<u>Maximum</u> No large pieces, and 1 small piece, provided no more than 1/2% by weight or 1.43 g. in 10 oz. pkg. 1.70 g. in 12 oz. pkg. 2.27 g. in 16 oz. pkg.	<u>Maximum</u> 3 per 3 oz. including 1 per 4 oz. or equivalent <u>Per Package</u> 10 oz. pkg: 10 units including 2 serious 12 oz. pkg: 12 units including 3 serious 16 oz. pkg: 16 units including 4 serious	Do not materially affect appearance or edibility of product	Do not more than slightly affect the appearance of product
B ¹ 32-35	1 large piece, and 2 small pieces, provided, no more than 1/2% by weight or 1.43 g. in 10 oz. pkg. 1.70 g. in 12 oz. pkg. 2.27 g. in 16 oz. pkg.	<u>Maximum</u> 4 per 3 ozs. including 1 per 3 oz. or equivalent <u>Per Package</u> 10 oz. pkg: 13 units including 3 serious 12 oz. pkg: 16 units including 4 serious 16 oz. pkg: 21 units including 5 serious	Do not materially affect appearance or edibility of product	Do not materially affect the appearance of product
C ² 28-31	1 large piece; and 2 small pieces, Provided, no more than 1/2% by weight or 1.43 g. in 10 oz. pkg. 1.70 g. in 12 oz. pkg. 2.27 g. in 16 oz. pkg.	<u>Maximum</u> 5 per 3 oz. including 1 per 2 oz. or equivalent <u>Per Package</u> 10 oz. pkg: 16 units including 5 serious 12 oz. pkg: 20 units including 6 serious 16 oz. pkg: 26 units including 8 serious	Do not seriously affect appearance or edibility of product	Do not seriously affect the appearance of product

¹ Frozen mixed vegetables that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score

² Frozen mixed vegetables that fall into this classification shall not be graded above U.S. Grade C regardless of total score.

CHARACTER

BEFORE COOKING

To determine the tenderness, flavor, and odor of the combined vegetables before cooking, check each basic vegetable for compliance with the requirements in the U.S. Standards for Grades of Frozen Mixed Vegetables and any other referenced standards.

At the same time the vegetables are checked for character, they may be separated and assembled in trays that have been previously weighed or tared for purposes of determining the proportions of ingredients.

When calculating the score for character of the mixed vegetables, make allowances for some of the individual vegetables to be a character or maturity in the next lower classification.

In a mixture containing peas, if all the basic vegetables (including peas) on an organoleptic (taste, sight, smell, and touch) basis are well within all the requirements for either Grade A or B or C, it is not necessary to test the peas by the brine flotation method. If the peas are near the minimum requirements for any of these grades, test the degree of tenderness or maturity of the peas by the brine flotation method as outlined in the [U.S. Standards for Grades of Frozen Peas](#).

AFTER COOKING

Check each of the cooked samples of combined vegetables for degree of tenderness. If any of the individual vegetables were at the minimum limits in the next lower classification prior to cooking, the combined mixed vegetables may not be tender or reasonably tender after cooking. In judging the character of frozen mixed vegetables, the tenderness after cooking may be the final determinant in assigning the score.

SUMMARY OF ALLOWANCES FOR CHARACTER

Frozen Mixed Vegetables		Individual vegetables prior to cooking (based on applicable U.S. Standards for individual vegetables)				
Grade and Score	Combined vegetables after cooking (including garnish)	Beans Green or Wax	Beans Lima	Carrots	Corn	Peas
A 36-40	Must be tender	Pods and seeds possess Good, or A, character	Green or light green, exclusive of white are tender or A tenderness; white limas are tender or reasonably tender, or A or B tenderness	Tender, or A, texture	No more advanced than cream-stage; reasonably tender texture and equal to score of 43 points, or top B maturity or higher	Reasonably tender and equal to score of 34 points, or middle B maturity or higher
B ¹ 32-35	Must be reasonably tender and practically free from tough fibers	Pods and seeds possess Reasonably good, or B, character	All limas, including white limas, are tender or reasonably tender, or B tenderness	Tender, or A, texture	Reasonably tender and equal to score of 40 points, or minimum B maturity or higher	Reasonably tender and equal to score of 32 points, or minimum B or higher
C ² 28-31	Must be fairly tender and reasonably free from tough fibers	Pods and seeds possess Fairly good, or C, character	All limas are fairly tender or C tenderness	Reasonably tender, or B, texture	Fairly tender or C maturity	Fairly tender or C maturity

¹ Frozen mixed vegetables that fall into this classification shall not be graded above U.S. Grade B, regardless of total score.

² Frozen mixed vegetables that fall into this classification shall not be graded above U.S. Grade C regardless of total score.

FLAVOR AND ODOR

Flavor and odor are determined after cooking. Additional information on cook methods for frozen mixed vegetables may be found in the [AIM Technical Procedures Manual](#), Cooking Procedures section.

To be Grade A or Grade B, the cooked samples must have a good flavor and odor. Every basic vegetable must have a good, characteristic normal flavor and odor, and the mixture as a whole, including any garnish, must be free of objectionable flavors or objectionable odors.

In Grade C, fairly good flavor and odor is permitted. If any individual vegetable lacks good characteristic flavor, the samples are considered to meet this requirement, provided the mixture as a whole, including any garnish, is free of objectionable flavors or objectionable odors.

Example: Poor flavor in the lima bean component. Within the cooked mixture an abnormal flavor would not be detectable.

Example: Any garnish that imparts a flavor to the product that would mask the normal flavors of any individual vegetable or of the vegetables as a mixture.

DETERMINING THE PROPORTION OF INGREDIENTS

SAMPLES FOR COMPOSITING

Determine the proportion of ingredients on the thawed vegetables as follows:

1. Separate and assemble each of the basic vegetables from all the containers in the sample;
2. Weigh each basic vegetable separately to obtain the aggregate weight of each basic vegetable from all the containers in the sample;
3. Add the aggregate weights of all the basic vegetables to obtain the grand total weight of all the basic vegetables from all containers in the sample; and
4. Calculate the percentage of each basic vegetable in the sample by dividing the aggregate weight of each basic vegetable by the grand total weight of all the basic vegetables.

Samples that have off-odors upon opening the container are not composited in determining the proportion of ingredients.

When there are many samples in a single inspection, up to 6 samples may be grouped for ease of handling. The aggregate weight of each vegetable is recorded for each group; the weight from each group is totaled; and, the percentages calculated from the grand total. The following example covers 18-12 ounce packages from a single inspection that were composited in three groups:

	Group 1	Group 2	Group 3	Total of Each
Beans	19 oz.	15 oz.	17 oz.	51 oz. 22%
Lima Beans	8 oz.	10 oz.	9 oz.	27 oz. 12%
Carrots	23 oz.	18 oz.	23 oz.	64 oz. 28%
Corn	11 oz.	13 oz.	12 oz.	36 oz. 16%
Peas	17 oz.	18 oz.	16 oz.	51 oz. 22%
			Total	229 oz. 100%