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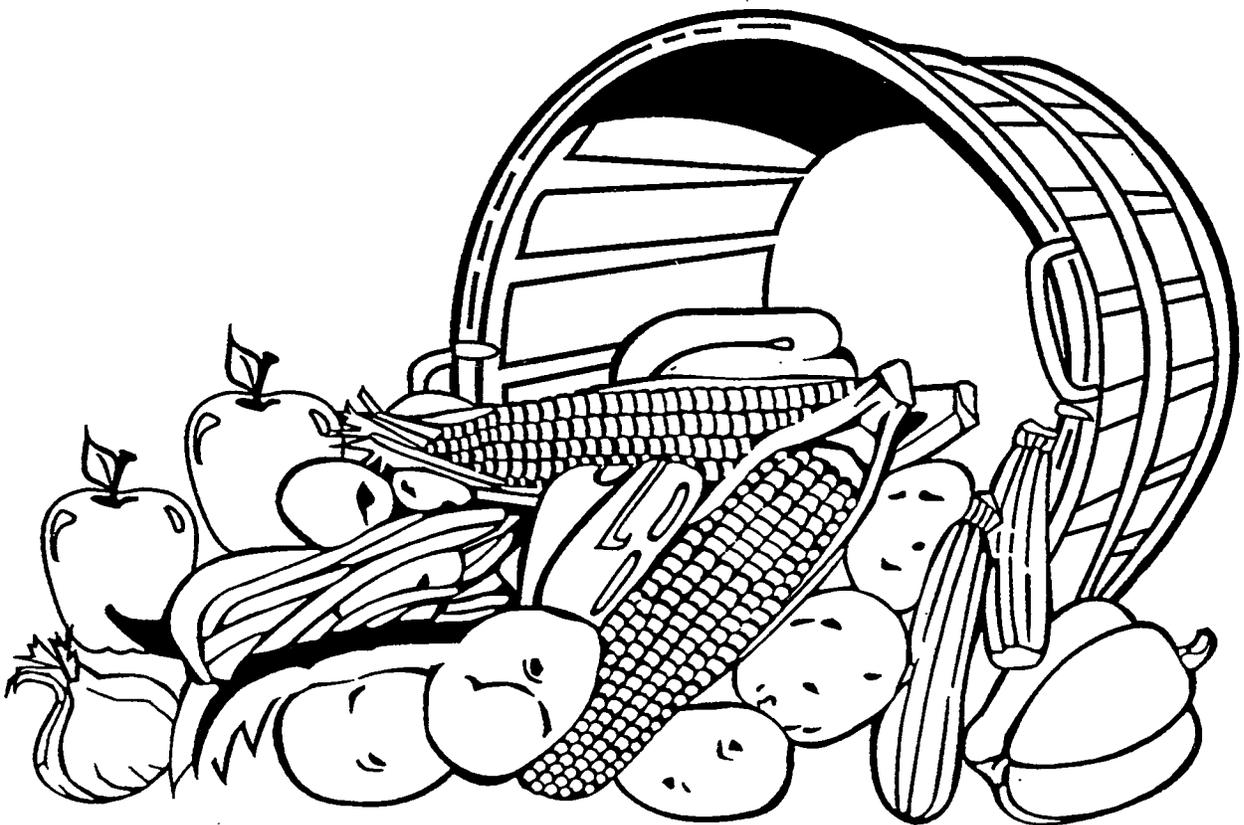
Agricultural
Marketing
Service

Fruit and
Vegetable
Programs

Fresh Products
Branch

Almonds

Shipping Point and Market Inspection Instructions



Shipping Point and Market Inspection Instructions for Almonds

These inspection instructions are specifically developed and designed by the Fresh Products Branch to assist officially licensed inspectors in the interpretation and application of the U.S. Standards for Grades of Almonds in the Shell, Section 51.2075; and, U.S. Standards for Grades of Shelled Almonds, Section 51.2105.

These instructions do not establish any substantial rule not legally authorized by the official grade standards. This publication supersedes any previously issued inspection instructions.

Any portion of these instructions beginning with a section number such as §51.--- and followed by **bold** print are sections or portions of sections copied directly from U.S. standards. The U.S. Standards for Grades of Almonds in the Shell, and U.S. Standards for Grades of Shelled Almonds are printed in the appendix of this instruction. All of the U.S. standards are administered and maintained by the Agricultural Marketing Service (AMS) and are available on the Internet under the USDA, AMS homepage (www.ams.usda.gov).

Refer to General Inspection Instructions for additional information pertaining to date, inspection point, carrier, condition of carrier, lading, etc. not covered in these instructions. (Reference to "General Inspection Instructions" in all Fresh Products Branch publications refers to any one or all of the following - General Shipping Point Inspection Instructions, General Market Inspection Instructions, or Fresh Fruit and Vegetable Certificate Writing Handbooks.)

November 1998

This replaces Inspection Instructions for Almonds in the Shell dated September 1965 and Inspection Instructions for Shelled Almonds dated September 1985.

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**Appendix I - U.S. Standards for Grades of Almonds in the Shell and
U.S. Standards for Grades of Shelled Almonds**

Appendix II – Certificate and Notesheet Examples

Part 1

Almonds in the Shell

(1) General

This part of the inspection instructions applies to almonds in the shell. They may be used in the inspection of either sweet or bitter almonds, however these two types of almonds may not be mixed together under the application of the grade standards.

The almond is botanically known as *prunus dulces*. It is related to other fruits such as peaches, apricots, plums and nectarines.

For many years, the almond industry in California has worked under a Federal marketing order regulating grower deliveries to handlers (packers), which is commonly known as "incoming" inspections. Definitions established by Fresh Products Branch (FPB) grade standards are used as references in the marketing order. Shipments going to domestic and international markets are not regulated, but many shipments are inspected by FPB authorized inspectors, handler personnel and other inspection agencies.

(2) Sampling

§51.2079 Application of Tolerances...The tolerances for the foregoing grades are applied to the entire lot of almonds, based upon a composite sample drawn from containers throughout the lot.

Representative Sampling

The importance of obtaining representative samples cannot be over emphasized. Accurate certification is only possible if the samples examined are truly representative of the entire lot or accessible portion. All portions of a lot or load shall receive the same attention in sampling regardless of the difficulty involved in reaching the more inaccessible layers or parts of a load.

Even though the almonds from various growers' lots are mixed and blended together in the process of preparation and packing, it can not be assumed that the quality is uniform in all containers in a lot. Samples must be drawn from many containers throughout the lot in order to assure that the total sample is representative of the entire lot.

Size of Samples

Sampling Packed Lots Other Than Consumer Size Packages. In lots of 50 or more containers, 1 out of each 10 containers shall be sampled; in lots of 5 to 49 at least 5 containers shall be sampled, and in lots of less than 5, all of the containers shall be sampled. Draw the sample from containers selected at random from all parts of the stack or load. The quantity of nuts taken from each sample will vary from a few nuts to a large handful or more, depending upon the number and size of the containers sampled. However, about the same quantity should be taken from each package. Open the top of the sack or carton, being careful to avoid unnecessary damage to the containers, and draw the sample from the central portion of some containers, from the bottom portion of some and from the top portion of other containers.

When sampling, observe the general appearance. If the almonds in any single container or number of containers are distinctly different in appearance or quality to those in the majority, and if the different portion of the lot can be identified by distinguishing marks or otherwise, the nuts from such containers should constitute a separate sample and be treated as a separate lot. If the containers of almonds cannot be segregated or identified by markings, the inspection shall be made on the basis of the composite sample for the entire lot with a notation under the "REMARKS" heading regarding the lack of uniformity.

Different Type or Size. When individual bags or packages in the lot contain a different type, or different size almonds from those in other containers, the samples from each type or size group of containers shall be kept separate. The two or more samples shall be graded and reported separately as separate lots.

Consumer Size Packages. Unshelled almonds are frequently packed in small transparent film bags which are then packed in large master shipping containers. These lots shall be sampled as follows:

Carlot or Truck Load. Select master containers at random at the rate of 1 per 25. Select 1 consumer package out of each master container selected.

Less than Carlot. Regardless of lot size, select 20 master containers at random when consumer packages are 1 pound units; select 15 master containers when consumer packages are 2 pound units. Select 1 consumer package out of each master container selected. When lots contain 20 or less master containers with 1 pound units or 15 or less master containers with 2 pound units, a consumer package shall be taken from each master container in the lot. Select packages from various portions of the containers. Each of the consumer size bags removed shall be replaced with a bag from another master container, selected for this purpose. Open every consumer package drawn from the lot and empty entire contents into a large carton or box. Mix thoroughly.

The inspector should be careful to draw only the amount required for analysis. The quantity of almonds drawn for inspection is normally at least twice as large as the amount required for grading. This provides for a check sample, equal in size to the graded sample, in case there is a dispute about the grade of the product inspected.

Currently, check samples are only retained on incoming inspections under the Federal marketing order. At shipping point, this check sample is usually held and maintained by the handler because of a lack of storage space available at shipping point offices and the possibility of an insect infestation. The samples are sealed for integrity and the handler regularly fumigates the product to reduce the possibility of an insect infestation.

On commercially inspected shipments, check samples may be drawn at the time of the initial sampling if an applicant requests this service. Inspectors should consider asking the applicant to maintain such samples because of the same issues noted above. If desired, such samples may be sealed by the inspection service in order to maintain integrity of the sample. Check samples which are held by the inspection service shall be returned to the applicant or be disposed of in accordance with the Regulations Governing Inspection, Certification, and Standards for Fresh Fruits, Vegetables, and Other Products.

Almonds are inspected on a composite sample basis. The composite sample shall be thoroughly mixed. The size of the sample listed on the table below shall be used for the category examined:

Pounds in Lot	Up to 15,000	15,001 to 30,000	30,001 to 60,000
Sample for Loose Extraneous and Foreign Material	1000 grams <i>(5 - 10)</i>	2000 grams <i>(2 - 3)</i>	3000 grams
Sample to Grade	100 nuts	200 nuts	300 nuts

For each additional 20,000 pounds, or fraction thereof, use an additional 1000 grams for Loose Extraneous and Foreign Material and 100 additional nuts for grade determination.

It is emphasized that the above table indicates the minimum sample size to be graded in each instance and that it may be necessary to analyze an additional 100 or 200 nuts (1000 or 2000 grams for loose extraneous and foreign material) in order to make a definite decision concerning quality and size.

Sampling During Packing

Sampling from Packing Line: When inspections are made in the packing house, the in-line method may be used if packing is in progress at the time of inspection. Samples shall be drawn from the packing line before the containers are closed.

Samples shall be taken frequently from the end of the belt or from containers being filled. These small samples shall be mixed together for analysis. Every 20 or 30 minutes, a cut-off shall be made in the sampling and a new sampling routine started. A portion of the sample just completed shall be analyzed for grade at that time.

Size Samples Analyzed. It is better to analyze smaller samples more often than to wait until a large quantity of samples has accumulated, even though it may be necessary to reduce to 50 or even to 25 the number of almonds graded at one time. This procedure enables inspectors to keep a closer check on the quality of the pack than if there were an hour or two allowed in order to accumulate and analyze a larger sample. If the quality of the almonds being packed falls below the intended level of quality at any time, the inspector can advise the packing house manager who in turn may take action to correct the situation.

Designation of Lots. Frequent analysis of small samples may serve to aid the packer in designating blocks of containers as separate lots. For example, if a block of 100 containers packed between 10:00 and 11:30 a.m. failed to meet grade, those 100 containers could be designated as a separate lot, stenciled with a lot number and a certificate issued.

Sampling Devices. A small scoop, cup, can or box shall be used in sampling, rather than taking the sample by hand. The use of such a sampling device is believed to result in more representative sampling. Automatic, mechanical samplers are considered the most accurate method of sampling, and this method is preferred in principle. Inspectors and supervisors must make sure that such mechanisms are working properly before approving their use for drawing inspection samples.

Mailing Sample. In terminal markets, almond inspections may be requested and the office may not have been furnished with equipment for proper inspection or other circumstances may make it necessary to send the sample drawn to another office for inspection and certification. Samples may be officially drawn by any authorized inspector and delivered or shipped for analysis and certification to a designated inspection office. Immediately after the sample is drawn, the inspector shall issue a currently recognized "Notice of Sampling." The original and at least one copy shall be shipped in the container with the sample to the designated office that will complete the analysis. One copy shall be mailed to the designated office and a copy shall be retained in the office where the sample was drawn.

If a sampling certificate is not available, enclose a paper identifying the sample by car, truck or lot number, date and place of sampling, type and number of containers, markings, name of applicant and name of sampler.

Inspectors analyzing officially drawn samples shall show the following statement under "REMARKS:"

"The sample covered by this certificate was officially drawn by _____
MM/DD/YY, at _____ as shown on Notice of Sampling No. _____
_____, which is attached."

In order to be sure that the official sample will be large enough for all possible needs, it shall consist of approximately 2-1/4 times the quantity necessary for sizing and grading. The sides and ends of the shipping container shall be well padded in order to reduce damage to the nuts in transit.

(3) Tolerances

§51.2075 U.S. No. 1...(b) In order to allow for variations incident to proper grading and handling, the following tolerances are provided as specified:

(1) For external (shell) defects. 10 percent, by count, for almonds which fail to meet the requirements of this grade other than for variety and size;

(2) For dissimilar varieties. 5 percent, by count, including therein not more than 1 percent for bitter almonds mixed with sweet almonds;

(3) For size. 5 percent, by count, for almonds which are smaller than the specified minimum thickness;

(4) For loose extraneous and foreign material. 2 percent, by weight, including therein not more than 1 percent which can pass through a round opening 24/64 inch (9.5 mm) in diameter: Provided that such material is practically free from insect infestation; and,

(5) For internal (kernel) defects. 10 percent, by count, for almonds with kernels failing to meet the requirements of this grade: Provided, that not more than one-half of this tolerance or 5 percent shall be allowed for kernels affected by decay or rancidity, damaged by insects or mold or seriously damaged by shriveling: And provided further that no part of this tolerance shall be allowed for live insects inside the shell.

§51.2076 U.S. No. 1 Mixed. "U.S. No. 1 Mixed" consists of almonds in the shell which meet the requirements of U.S. No. 1 grade, except that two or more varieties of sweet almonds are mixed.

§51.2077 U.S. No. 2. "U.S. No. 2" consists of almonds in the shell which meet the requirements of U.S. No. 1 grade, except that an additional tolerance of 20 percent shall be allowed for almonds with shells damaged by discoloration.

§51.2078 U.S. No. 2 Mixed. "U.S. No. 2 Mixed" consist of almonds in the shell which meet the requirements of U.S. No. 2 grade, except that two or more varieties of sweet almonds are mixed.

SUMMARY OF TOLERANCES

U.S. Grades	External (Shell) Defects							Internal (Kernel) Defects		
	Defects	Damage by Discoloration	Dissimilar Varieties	Bitter Almonds Mixed with Sweet	Size	Loose Extraneous and Foreign Material (By weight)	Pass thru opening 24/64" (By weight)	Defects	Decay or rancidity, damage by insects or mold or SD by shriveling	Live insects inside the shell
U.S. No. 1	10%	10%	5%	1%	5%	2%	1%	10%	5%	0%
U.S. No. 1 Mixed ¹	10%	10%	---	1%	5%	2%	1%	10%	5%	0%
U.S. No. 2	10% ²	20%	5%	1%	5%	2%	1%	10%	5%	0%
U.S. No. 2 Mixed ¹	10% ²	20%	---	1%	5%	2%	1%	10%	5%	0%

¹ Must consist of 2 or more varieties of sweet almonds

² Not included in 10% defect tolerances

The tolerances that are in ***BOLD/ITALICS*** are included in the tolerances in the previous cell.

(4) Basis for Determining Percentages

§51.2080 Determination of grade. In grading the inspection sample, the percentage of loose hulls, pieces of shell, chaff and foreign material is determined on the basis of weight. Next, the percentages of nuts which are of dissimilar varieties, undersize or have adhering hulls or defective shells are determined by count, using an adequate portion of the total sample. Finally, the nuts in that portion of the sample are cracked, and the percentage having internal defects is determined on the basis of count.

Percentages are determined by two different methods - by count and by weight. All factors affecting the nuts themselves are based upon a counted sample. This includes size, varietal type and defects of the shell and the kernel.

§51.2082 Loose extraneous and foreign material...means loose hulls, empty broken shells, pieces of shells, external insect infestation and any substance other than almonds in the shell or almond kernels.

Loose extraneous and foreign material is based upon a weighed sample. The percentage is applied to the 2 percent tolerance for loose extraneous and foreign material, including not more than 1 percent which can pass through a round opening 24/64 inch in diameter, provided that such material is practically free from insect infestation.

(5) Shell and Foreign Material Determination

§51.2082 Loose extraneous and foreign material...means loose hulls, empty broken shells, pieces of shells, external insect infestation and any substance other than almonds in the shell or almond kernels.

Loose extraneous and foreign material includes glass, metal, stones, woody materials, loose clumps of box sealing glue and any other material which is not almond kernels or in-shell almonds. Box sealing glue attached to a shell or kernel would be considered a defect of that shell or kernel and not as foreign material.

The percentages of loose extraneous and foreign material are determined on the basis of a weighed sample before the sample is graded for other factors. The size of the sample listed on the table below shall be used for the category examined:

Pounds in Lot	Up to 15,000	15,001 to 30,000	30,001 to 60,000
Sample for Loose Extraneous and Foreign Material	1000 grams	2000 grams	3000 grams

For each additional 20,000 pounds, or fraction thereof, use an additional 1000 grams for Loose Extraneous and Foreign Material.

Screening

The standards limit the amount of loose extraneous and foreign material which will pass through a 24/64 inch round opening to not more than 1%. The weighed sample shall be screened over a sieve with 24/64 inch openings. Screen the sample in several portions to avoid overloading the screen. Weigh all of the material passing through the screen and determine its percentage of the entire screened sample. If the percentage is more than 1% for loose extraneous and foreign material that passes through a 24/64 inch round opening, the lot will fail to meet the grade requirements.

Insects in Screenings

The tolerance for the screened material provides that the screenings be "practically free from insect infestation." An occasional dead insect or insect fragment, or even one live insect in the screenings from the sample shall be considered permissible as "**practically free.**" However, if two or more live insects or numerous dead insects or fragments are present in the sample, the lot shall be reported as failing to meet grade on account of insect infestation.

Shell and Foreign Material

After the fine material has been screened out (that which will pass through a 24/64 inch round opening), the sample shall be sorted by hand to pick out all pieces of shell, loose hulls and foreign material which "rode" the screen. Any such material found shall be weighed, and its weight added to that of the screenings. The percentage of these combined items permitted in the grades as loose extraneous or foreign material is limited to 2 percent.

(6) Size

§51.2075 (a) Unless otherwise specified, the almonds are of a size not less than 28/64 of an inch (11.1 mm) in thickness.

§51.2091 Thickness...means the greatest dimension between the two semi-flat surfaces of the shell measured at right angles to a plane extending between the seams of the shell.

The standards require a minimum thickness of 28/64 inch unless otherwise specified. If a larger or smaller minimum size is specified when the inspection is requested, the size determination shall be made on the basis of that size. Accurate calipers may be used to measure the almonds if a measuring slot of the diameter specified is not available.

If a larger or smaller size is specified, this size shall be reported in connection with the grade. In the REMARKS section state that "Size specified at applicant's request."

Determining Size

Size is determined on the basis of thickness by passing the almond through a slotted opening. Count out at random 100 almonds and pick out all nuts which will pass through a slotted opening 28/64 of an inch wide. Never exert pressure to force nuts through the opening. A nut which just touches both sides of the slot opening shall be considered as meeting the size requirement. Record the number of nuts and the percentage (by count) of undersize on the notesheet. If the random sample of 100 nuts used to determine undersize does not show the lot to be definitely within or over the 5 percent tolerance for undersize, then run another random sample of 100 nuts. Add these results to your first sample to determine the percentage of undersize. If the tolerance is over the 5 percent tolerance for undersize, the lot will fail account of undersize.

Size Range

The approximate range in thickness of the nuts in the sample shall be determined and reported. This can be done with a sizing gauge or accurate calipers. It is satisfactory to measure in 64ths of an inch using only even numbers such as 26, 28, 30, 32, 34, etc. The range in thickness measurements is useful in furnishing a general picture of the size.

(7) Quality Determination

The factors affecting quality are determined from the same sample used for size determination. The analysis is made in two separate steps. First, the nuts are graded on the basis of shell or external quality characteristics. Then every nut in the sample is cracked and graded on the basis of internal or kernel quality. It is possible that individual nuts may be scored against the tolerances for both internal and external defects.

External Defects

In grading the sample on the basis of its external quality, all factors are applied to each nut individually.

§51.2089 Damage...means any defect which materially detracts from the appearance of the individual kernel, or the edible or shipping quality of the almond. Any one of the following defects or combination thereof, the seriousness of which exceed the maximum allowed for any one defect shall be considered as damage.

§51.2090 Serious Damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold. The following defects shall be considered as serious damage: Shriveling when the kernel is seriously withered, shrunken, leathery, tough or only partially developed: Provided, that partially developed kernels are not considered seriously damaged if more than one-fourth of the pellicle is filled with meat.

The examination for defects is made on the same sample used to determine size, including any nuts scored for undersize or dissimilar varietal type. Almonds with external (shell) quality defects are sorted out, counted and recorded. The external defects are discussed below:

Cleanness

§51.2083 Clean...means that the shell is practically free from dirt and other adhering foreign material.

An almond must be clean to meet the requirements of any U. S. grade. Unless there is sufficient dirt or other foreign matter adhering to the individual nut to materially affect its appearance, it shall be considered clean. Score individual nuts against the 10% tolerance for external (shell) defects.

Brightness

§51.2084 Fairly Bright...means that the shells show good characteristic color.

Almonds that are sold in the shell are regularly bleached to produce a bright, golden yellow color of the shell. All U. S. grades specify that the almonds shall be "fairly bright." Brightness shall be judged on the basis of variety, as certain varieties normally show a brighter color than other varieties. The hard-shell and semi-soft shell varieties are usually brighter in color than the paper-shell and soft-shell varieties. Inspectors shall not become overly technical in judging brightness, as some of the paper-shell varieties may show a light brown to a dark brown color.

Brightness shall be described by the terms "bright," "fairly bright" or "dull." When the appearance of an individual nut is so poor as to be classed as "dull," score that nut against the 10% tolerance for external (shell) defects.

Uniformity of Color

§51.2085 Fairly uniform color...means the shells do not show excessive variation in color, whether bleached or natural.

Uniformity of color refers to the variation of shell color between the individual nuts in the lot. Color varies materially with variety, but all varieties may show considerable variation within lots. Almonds must be "fairly uniform in color" to meet the requirements of any U. S. grade. Lack of uniformity in shell color will seldom be a problem.

Individual nuts that show an excessive variation in color from other nuts in the sample shall be scored against the 10% tolerance for external (shell) defects. Nuts showing discoloration of the shell due to staining shall be handled under discoloration.

Dissimilar Varieties

§51.2081 Similar Varietal Characteristics...means that the almonds are similar in shape and are reasonably uniform in degree of hardness of the shells, and that bitter almonds are not mixed with sweet almonds. For example, hard-shelled varieties, semi-soft shelled varieties, soft-shelled varieties and paper-shelled varieties are not mixed together, nor are any two of these types mixed under this definition.

There are a great many known varieties of almonds, but only a few are of commercial importance. Sales are usually made on the basis of variety in the paper-shell and soft-shell types, while semi-soft-shell and hard-shell types, are sold on the basis of hardness of the shell. Similar varieties may be mixed, particularly in the latter two groups, without adversely affecting the appearance of the lot. Important commercial varieties are:

Paper Shell	Soft Shell	Semi-Soft Shell	Hard Shell
Nonpareil	IXL	Drake	Jordan
	Neplus	Mission	Bidwell
	Jordanolo	Peerless	

Inspectors must refuse to certify variety of almonds. In most cases, it will be sufficient to certify simply as "almonds in the shell" and to quote any marks relating to variety which may appear on the containers.

Even though the variety is not certified, the nuts which are not of similar varietal characteristics shall be sorted out of the sample and scored against the tolerance for dissimilar varieties. Use the external appearance, hardness of shell and shape of kernel as the basis for judging variety. Do not score the nuts as dissimilar unless the differences are very conspicuous.

Discoloration of the Shells

§51.2089 Damage...(a) Discoloration of the shell which is medium gray to black and affects more than one-eighth of the surface in the aggregate. Normal variations of a reddish or brownish color shall not be considered discoloration.

Almonds of most varieties usually show a variation in color of the shells. Natural variation between individual nuts within the lot shall not be confused with discoloration. Only distinctly gray to black discoloration of a staining nature which affects more than 1/8 of the surface of the shell shall be scored against the grade as "discoloration."

For the U.S. No. 1 and U.S. No. 1 Mixed grades the 10% tolerance for external (shell) defects shall apply. For the U.S. No. 2 and U.S. No. 2 Mixed grades, the 20% additional tolerance for damage by discolored shells shall apply.

Adhering Hulls

§51.2089 Damage...(b) Adhering hulls which cover more than 5 percent of the shell surface in the aggregate.

Almonds to which the hulls stick tightly are designated by the trade as "stick tights." When the adhering hull covers more than 5 percent of the shell surface, in the aggregate, the almond shall be scored against the 10% tolerance for external defects. Most lots contain none or very few nuts which are scorable for this defect.

Broken Shells

§51.2089 Damage...(c) Broken shells when a portion of the shell is missing, or the shell is broken or fractured to the extent that moderate pressure will permit the kernel to become dislodged.

Broken shells are quite common in paper-shell and soft-shell varieties of almonds. Broken shells, when a small portion of the shell is missing, shall be scored as damage. If the shell is broken or fractured to the extent that moderate pressure between the fingers will permit the kernel to become dislodged, it shall be scored as damage. An empty shell found in the sample that is also broken shall be scored with loose extraneous and foreign material.

Internal Defects

After the size factors, dissimilar varieties and external defects have been determined and recorded, the sample shall be analyzed for internal defects. All nuts previously scored for undersize, dissimilar variety or shell defects are returned to the counted sample to be cracked with the rest of the sample. Each kernel shall be examined as the shell is removed. The kernel defects are discussed below.

Dryness

§51.2086 Well Dried...means that the kernel is firm and brittle, not pliable or leathery.

Almonds must be "well dried" to meet the requirements of any U. S. grade. The thinner shell varieties, even when properly dried, may have kernels which are slightly pliable, but in satisfactory condition. Kernels which are distinctly pliable or leathery shall be reported as "not well dried" and scored against the 10% tolerance for internal defects. If a kernel can be broken with the fingers without bending, it is considered sufficiently dry or "well dried."

Mold

§51.2089 Damage...(e) Mold, when visible on the kernel, except when white or gray and easily rubbed off with the fingers.

§51.2090 Serious damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

The standards define damage by mold, which is also included in the definition for serious damage. Therefore, any attached mold which is conspicuous shall be scored as **serious damage** against the restricted tolerance of 5 percent, even though the area affected may be very small. White or gray mold that can be easily rubbed off with the fingers shall be ignored.

Gum

§51.2089 Damage...(f) Gum, when a film of shiny, resinous appearing substance affects an area aggregating more than the equivalent of a circle one-quarter inch (6.4 mm) in diameter.

Gum affects all varieties of almonds, but some are more susceptible to it than others. Gum appears as shiny resinous substance, which exudes from the almond when it is injured during the growing process. Affected kernels generally have a sweeter taste than non-affected ones. Kernels that are damaged by gum shall be scored against the 10% tolerance for internal defects. Gum affecting lesser areas than described above shall be ignored.

Shriveling

§51.2089 Damage...(h) Shriveling when the kernel is excessively thin for its size, or when materially withered, shrunken, leathery, tough or only partially developed: Provided, that partially developed kernels are not considered damaged if more than three fourths of the pellicle is filled with meat. An almond containing two kernels shall not be classed as damaged if either kernel has more than three-fourths of the pellicle filled with meat.

§51.2090 Serious Damage...Shriveling when the kernel is seriously withered, shrunken, leathery, tough or only partially developed: Provided that partially developed kernels are not considered seriously damaged if more than one-fourth of the pellicle is filled with meat.

Most lots contain kernels that show various degrees of shriveling. Some varieties may show more or less fine wrinkling than other varieties. Kernels harvested from trees that have been regularly irrigated will show fewer shriveled kernels than from those trees that are irrigated less regularly or those that are "dry farmed." Abnormally hot weather can also cause various degrees of shriveling.

The U.S. standards provide for three separate ways to score kernels as damage by shriveling. They state:

Excessively thin: Kernels may be considered excessively thin for their size when the meat content, in a cross section of the kernel across the middle part, has less than approximately 1/4 of the volume found in a normal kernel. Thin kernels shall be compared with unaffected kernels in the lot in order to verify that the kernels are indeed excessively thin. The graphic below shows a cross section of what would be a normal meaty kernel and one that is excessively thin in relation to its size.



Materially withered, shrunken, or tough: Scoring kernels that are withered, shrunken, or tough is highly subjective. It is natural for kernels to have some degree of withering or shrunken appearance. Inspectors shall exercise caution when scoring shriveled almonds. The kernel shall be considered as damaged when the withering or shrinking is sufficient to cause material amounts of wrinkling on most of the surface of the kernel. Shallow to moderate wrinkling of the surface is not considered as damage.

(Kernels that are pliable or leathery shall be reported as "not well dried." See section on dryness.)

Partially developed: Some kernels do not develop normally during the growing process. They may be somewhat deformed or have undeveloped portions where there is only the pellicle present, but no meat. If less than 3/4 of the pellicle is filled with meat, the kernel is considered damaged and if less than 1/4 of the pellicle is filled with meat, the kernel is seriously damaged.

Shriveling found in nuts containing "doubles" or two kernels, shall be judged on the basis of the better developed of the two kernels, regardless of how badly shriveled the other kernel may be. The definitions of damage and serious damage shall be applied to the better kernel and scored accordingly.

Brown Spot

§51.2089 Damage...(i) Brown spot which affects an aggregate area on the kernel greater than the area of a circle one-eighth inch (3.2 mm) in diameter.

This defect is thought to be caused by sucking type insects feeding on the almonds in early stages of development. It occurs as one or more brown spots varying in size from less than 1/16 to 3/8 inch or more in diameter. Frequently, the spots are sunken. The flavor of the kernels that are only slightly affected by brown spots are not noticeably changed, but more severely affected kernels may be slightly bitter. All grades specify free from damage by brown spot. This means a kernel is not scored as a defect unless a total area (aggregate) more than the equivalent of a circle 1/8 inch (3.2 mm) in diameter is affected by a light brown or darker discoloration. Score this defect against the 10% tolerance for internal defects.

Skin Discoloration

§51.2089 Damage...(g) Skin Discoloration when more than one-half of the surface of the kernel is affected by very dark or black stains contrasting with the natural color of the skin.

Skin discoloration is a superficial, stain-like blemish of unknown origin which appears infrequently. The Jordanolo variety has been the variety most likely to show it. Since it apparently does not effect the flesh of the kernel in any way, the standards permit the skin on as much as one-half of the surface of the kernel to show very dark or black discoloration.

When the very dark or black stains exceed one-half of the surface of the kernel, score as damage against the 10% tolerance for internal defects.

Insects

§51.2089 Damage...(d) Insect Injury when the insect, web or frass is present or there is definite evidence of insect feeding.

§51.2090 Serious damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

A nut showing any definite evidence of insect activity inside the shell is scored against the restricted tolerance of 5 percent. Presence of a dead insect, frass, web, evidence of insect feeding, or any combination of these factors shall be scored as serious damage. Do not score a nut if there is doubt that the blemish was caused by insect activity.

The standards specify that there is no tolerance (0%) for the presence of live insects inside the shell. Live insects are seldom present in lots packed under modern methods of preparation. In effect, the presence of live insects inside the shell would cause the lot to fail to meet any grade.

Nuts containing dead insects are counted along with other defects that are seriously damaged and scored against the restricted tolerance of 5 percent.

Decay and Rancidity

§51.2087 Decay...means that part or all of the kernel has become decomposed.

§51.2088 Rancidity...means that the kernel is noticeably rancid to taste.

§51.2090 Serious damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

Almonds that are properly dried seldom develop decay or become rancid. However, if held in common storage and subjected to high temperatures and humidity, decay or rancidity may develop. Kernels showing decay or rancidity are scored against the restricted tolerance of 5 percent.

Rancid kernels show yellow to brown to gray discoloration of the flesh. The flesh may appear oily, watersoaked or dry and crumbly and often with a disagreeable odor and flavor. Tasting the kernels may be a part of the inspection process when rancid kernels are in the lot. Inspectors shall only taste test suspected kernels until they have established the visual characteristics which set aside the rancid kernels from the non-rancid kernels in the lot. Do not confuse a stale or flat flavor with rancidity. If a decayed or rancid kernel is also affected by another defect, score the kernel as decay or rancid.

(8) The Certificate

General instructions for writing the certificate are provided in the general inspection instructions and in the certificate writing handbooks (FV-184 and FV-300).

Part 2

Shelled Almonds

(1) General

This part of the inspection instructions applies to shelled almonds. The U.S. standards may be applied to both types (sweet or bitter almonds), however these two types of almonds may not be mixed together.

The almond is botanically known as *prunus dulces*. It is related to other fruits such as peaches, apricots, plums and nectarines.

For many years, the almond industry in California has worked under a Federal marketing order regulating grower deliveries to handlers (packers), which is commonly known as "incoming" inspections. Definitions established by FPB grade standards are used as references in this marketing order. Shipments going to domestic and international markets are not regulated, but many shipments are inspected by FPB authorized inspectors, handler personnel and by other inspection agencies.

At times inspectors are requested to inspect manufactured or blanched almonds. Please refer to the information at the end of these instructions and contact supervisors for further information before proceeding.

(2) Sampling

§51.2115 Application of Tolerances...The tolerances for the grades are to be applied to the entire lot, and a composite sample shall be taken for determining the grade. However, any container or group of containers in which the almonds are found to be materially inferior to those in the majority of the containers shall be considered a separate lot.

Representative Sampling

The importance of obtaining representative samples cannot be over emphasized. Accurate certification is only possible if the samples examined are truly representative of the entire lot or accessible portion. All portions of a lot or load shall receive the same attention in sampling regardless of the difficulty involved in reaching the more inaccessible layers or parts of a load.

Even though the almonds from various growers' lots are mixed and blended together in the process of preparation and packing, it can not be assumed that the quality is uniform in all containers in a lot. Samples must be drawn from many containers throughout the lot in order to ensure that the total sample is representative of the entire lot.

The inspector should be careful to draw only the amount required for analysis. The quantity of almonds drawn for inspection is normally at least twice as large as the amount required for grading. This provides for a check sample, equal in size to the graded sample, in case there is a dispute about the grade of the product inspected.

Currently, check samples are only retained on incoming inspections under the Federal marketing order. At shipping point, this check sample is usually held and maintained by the handler because of a lack of storage space available at shipping point offices and the possibility of an insect infestation. The samples are sealed for integrity and the handler regularly fumigates the product to reduce the possibility of an insect infestation.

On commercially inspected shipments, check samples may be drawn at the time of the initial sampling if an applicant requests this service. Inspectors should consider asking the applicant to maintain such samples because of the same issues noted above. If desired, such samples may be sealed by the inspection service in order to maintain integrity of the sample. Check samples which are held by the inspection service shall be returned to the applicant or be disposed of in accordance with the Regulations Governing Inspection, Certification, and Standards for Fresh Fruits, Vegetables, and Other Products.

Size of Samples

The grade tolerances are based on a randomly drawn composite sample. Table I shows the minimum number of grams (1,000 grams equals 2.2 pounds) to be drawn and analyzed for different size lots when the nuts are in containers.

Inspectors working a packing line (in-line inspection) shall draw and analyze a minimum of 200 grams for each 2,000 pounds packed. When the lot is found to fail the grade on the initial analysis, additional kernels (500 to 1,000 grams total) shall be separated from the sample and analyzed. The results of this analysis shall be averaged with the results of the first to determine if the lot meets or fails the requirements.

TABLE I

Lot Size	Grams Drawn*	Grams Analyzed*
10,000 pounds or less	2,000	1,000
10,001 to 44,000 pounds	4,000	2,000
44,001 to 70,000 pounds	6,000	3,000
Draw an additional 2,000 grams and analyze an additional 1,000 grams for each additional 30,000 pounds or less for lots over 70,000 pounds.		
* Use one-half these amounts for US No. 1 Pieces		

Size of Sample Drawn. The total weight of the drawn sample shall be reported on the certificate as an approximate weight, in multiples of 1,000 grams. For example, 3,257 grams shall be shown on the certificate as approximately 3,000 grams.

Size of Sample Analyzed. Samples of kernels in containers are weighed in multiples of 500 grams for U.S. No. 1 Pieces and 1,000 grams for all other grades. In-line inspection samples are weighed in multiples of 200 grams. A statement of size of sample drawn and size of sample analyzed are combined and reported as follows:

Example:

"Of approximately 4,000 grams sample drawn, 2,000 grams analyzed contain the following:"

Frequency of Samples

Samples are randomly drawn from at least 5 percent, (preferably 10 percent) of the containers in lots of 200 containers or more and from at least 10 percent of the containers in lots of less than 200 containers. Containers shall be obtained from various parts of the lot and nuts drawn from near the top, bottom and sides of selected containers.

A number of lots are occasionally put together to make a load. When each lot is the same in count, size, quality, variety, and markings, one composite sample shall be used for analysis. If there is an obvious difference between lots and each can be identified by markings, then separate samples for each shall be drawn and analyzed. When markings are identical, the lots shall be sampled and analyzed as one lot, but a statement under "REMARKS" shall state that the quality of the lot is variable.

Official Sampling

Official samples may be drawn by any USDA authorized inspector. Analysis of other than official samples shall be restricted to the submitted sample.

In terminal markets, almond inspections may be requested and the office may not have been furnished with equipment for proper inspection or other circumstances may make it necessary to send the sample drawn to another office for inspection and certification. Samples may be officially drawn by any authorized inspector and delivered or shipped for analysis and certification to a designated inspection office. Immediately after the sample is drawn, the inspector shall issue a currently recognized "Notice of Sampling." The original and at least one copy shall be shipped in the container with the sample to the designated office that will complete the analysis. One copy shall be mailed to the designated office and a copy shall be retained in the office where the sample was drawn.

If a sampling certificate is not available, enclose a paper identifying the sample by car, truck or lot number, date and place of sampling, type and number of containers, markings, name of applicant and name of sampler.

Inspectors analyzing officially drawn samples shall show the following statement under Remarks:

"The sample covered by this certificate was officially drawn by _____
on MM/DD/YY, at _____ as shown on Notice of Sampling
No. _____, which is attached."

In order to be sure that the official sample will be large enough for all possible needs, it shall consist of approximately 2-1/4 times the quantity necessary for sizing and grading. The sides and ends of the shipping container shall be well padded in order to reduce damage to the nuts in transit.

(3) Tolerances

§51.2105 U.S. Fancy...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (a) For dissimilar varieties...5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds; (b) For doubles...3 percent; (c) For kernels injured by chipping and/or scratching...5 percent; (d) For foreign material...one-twentieth of 1 percent (0.05 percent). No part of this percentage shall be allowed for glass and metal; (e) For particles and dust...One-tenth of 1 percent (0.10 percent); and, (f) For other defects...2 percent, including not more than one-half of this amount, or 1 percent, for split or broken kernels, and including not more than one-half of the former amount, or 1 percent, for seriously damaged kernels.

§51.2106 U.S. Extra No. 1...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (a) For dissimilar varieties...5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds; (b) For doubles...5 percent; (c) For kernels injured by chipping and/or scratching...5 percent; (d) For foreign material...one-twentieth of 1 percent (0.05 percent). No part of this percentage shall be allowed for glass and metal; (e) For particles and dust...One-tenth of 1 percent (0.10 percent); and, (f) For other defects...4 percent, including not more than one-fourth of this amount, or 1 percent, for split or broken kernels, including not more than three-eighths of the former amount, or 1-1/2 percent, for seriously damaged kernels.

§51.2107 U.S. No. 1...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (a) For dissimilar varieties...5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds; (b) For doubles...15 percent; (c) For kernels injured by chipping and/or scratching...10 percent; (d) For foreign material...one-twentieth of 1 percent (0.05 percent). No part of this percentage shall be allowed for glass and metal; (e) For particles and dust...One-tenth of 1 percent (0.10 percent); and, (f) For other defects...5 percent, including not more than one-fifth of this amount, or 1 percent, for split or broken kernels, including not more than three-tenths of the former amount, or 1-1/2 percent, for seriously damaged kernels.

§51.2108 U.S. Select Sheller Run...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (a) For dissimilar varieties...5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds; (b) For doubles...15 percent; (c) For kernels injured by chipping and/or scratching...20 percent; (d) For foreign material...one-tenth of 1 percent (0.10 percent). No part of this percentage shall be allowed for glass and metal; (e) For particles and dust...One-tenth of 1 percent (0.10 percent); and, (f) For split and broken kernels...5 percent: Provided, that not more than two-fifths of this amount, or 2 percent, shall be allowed for pieces which will pass through a round opening 20/64 inch (7.9 mm) in diameter; and (g) For other defects...3 percent, including not more than two-thirds of this amount, or 2 percent, for serious damage.

§51.2109 U.S. Standard Sheller Run...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (a) For dissimilar varieties...5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds; (b) For doubles...25 percent; (c) For kernels injured by chipping and/or scratching...35 percent, Provided, that not more than three-sevenths of this amount, or 15 percent, shall be allowed for split and broken: And provided

further, that not more than one-third of this latter amount, or 5 percent shall be allowed for pieces which will pass through a round opening 20/64 inch (7.9 mm) in diameter; (d) For foreign material...two-tenth of 1 percent (0.20 percent). No part of this percentage shall be allowed for glass and metal; (e) For particles and dust...One-tenth of 1 percent (0.10 percent); and, (f) For other defects...3 percent, including not more than two-thirds of this amount, or 2 percent, for serious damage.

§51.2110 U.S. No. 1 Whole and Broken...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (1) For dissimilar varieties...5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds; (2) For doubles...35 percent; (3) For foreign material...Two-tenths of 1 percent (0.20 percent). No part of this percentage shall be allowed for glass and metal; (4) For particles and dust...One-tenth of 1 percent (0.10 percent); (5) For undersize...5 percent; and, (6) For other defects...5 percent, including not more than three-fifths of this amount, or 3 percent, for serious damage.

§51.2111 U.S. No. 1 Pieces...In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted: (1) For bitter almonds mixed with sweet almonds...1 percent; (2) For foreign material...Two-tenths of 1 percent (0.20 percent). No part of this percentage shall be allowed for glass and metal; (3) For particles and dust...1 percent; and, (4) For other defects...5 percent, including not more than three-fifths of this amount, or 3 percent, for serious damage.

SUMMARY OF TOLERANCES FOR GRADES OF SHELLED ALMONDS

U.S. Grades	Whole Kernels	Min. Dia. In inches	Dissimilar	Doubles	Chip & Scratch	Foreign Material	Particles & Dust	Split & Broken	Other Defects	Serious Damage	Under-size
U.S. Fancy	---	---	5%	3%	5%	0.05%	0.1%	1%	2%	1%	---
U.S. Extra No. 1	---	---	5%	5%	5%	0.05%	0.1%	1%	4%	1.5%	---
U.S. No. 1	---	---	5%	15%	10%	0.05%	0.1%	1%	5%	1.5%	---
U.S. Select Sheller Run	---	---	5%	15%	20%	0.1%	0.1%	5%	3%	2%	---
U.S. Standard Sheller Run	---	---	5%	25%	35%	0.2%	0.1%	15%	3%	2%	---
U.S. No. 1 Whole & Broken	30%	20/64, UOS	5%	35%	X	0.2%	0.1%	X	5%	3%	5%
U.S. No. 1 Pieces	X	8/64	X	X	X	0.2%	1%	X	5%	3%	5%

X = No limit established;

Numbers in ***Bold/Italics*** = also included in "Other Defects;" Cell with double lines = Includes maximum 2% under 20/64; Bold around box = Includes maximum 5% under 20/64 inch, % also included in "Chip & Scratch."

(4) Determining and Reporting Percentages and Defects

In order to allow for variations incident to proper grading and handling, the tolerance permitted shall be determined by **weight**. Grams are used to determine percentages and are reported in tenths of a gram (0.1). Percentages of defects, dissimilar varieties and size (count) are shown on the certificate in hundredths of a percent (0.00%).

(5) Foreign Material and Particles and Dust

§51.2123 Foreign Material...means pieces of shell, hulls or other foreign matter that will not pass through a round opening 8/64 of an inch (3.2 mm) in diameter.

§51.2126 Particles and Dust...means fragments of almond kernels or other material that will pass through a round opening 8/64 of an inch (3.2 mm) in diameter.

Foreign Material: The term "...or other foreign matter..." indicates any material other than almond kernels (meats). This would include loose pieces of glass, metal, stones, insects, woody materials, clumps of box sealing glue, etc., that are not an almond kernel in whole or part. It is noted that in each of the grades, any foreign matter consisting of **glass or metal**, whether or not it is attached to a kernel, is prohibited and the presence of such material would **cause the lot to fail to meet grade requirements**.

Any foreign material that is attached to a kernel (embedded in the kernel) is considered a defect of the kernel, see section on "embedded shell/embedded foreign material" for further explanation.

Particles and Dust: All grades require "free from particles and dust," and all except U.S. No. 1 Pieces allow a 0.1% tolerance.

U.S. No. 1 Pieces allows a 1% tolerance for particles and dust. When a minimum size 8/64 inch or smaller is specified, all material smaller than the minimum shall be considered particles and dust (1%). When a minimum size larger than 8/64 inch is specified, all **kernel** material smaller than the minimum, but 8/64 inch or larger shall be considered undersize. All material smaller than 8/64 inch shall be considered particles and dust.

(6) Size

§51.2113 Size Requirements...The size may be specified in terms of range in count of whole almond kernels per ounce or in terms of minimum, or minimum and maximum diameter. When a range in count is specified, the whole kernels shall be fairly uniform in size, and the average count per ounce shall be within the ranges specified. Doubles and broken kernels shall not be used in determining counts. Count ranges per ounce commonly used are shown below, but other ranges may be specified: Provided, that the kernels are fairly uniform in size.

Count Range Per Ounce

16 to 18, inclusive	18 to 20, inclusive	20 to 22, inclusive	22 to 24, inclusive
23 to 25, inclusive	24 to 26, inclusive	26 to 28, inclusive	27 to 30, inclusive
30 to 34, inclusive	34 to 40, inclusive	40 to 50, inclusive	50 and smaller

§51.2114 Tolerance for Size...(a) When a range is specified as, for example, "18/20," no tolerance for counts above or below the range shall be allowed.

(b) When the minimum, or minimum and maximum diameter are specified, a total tolerance of not more than 10 percent, by weight, may fail to meet the specified size requirements: Provided, that not more than one-half of this amount, or 5 percent, may be below the minimum size specified.

Size is determined and generally specified in connection with grade. It may be specified in terms of count per ounce, minimum diameter, or minimum and maximum diameters. Kernels sized according to count per ounce must also be fairly uniform in size. This requirement does not apply when diameter is specified.

Determining Count Range Per Ounce

When determining count ranges per ounce, divide the grade analysis sample into three equal portions; such as three – 8 ounce or three – 10 ounce portions. Doubles and broken kernels shall not be included in the sample.

Count the number of whole kernels in each portion and determine average count per ounce by dividing the total number of kernels in all three portions by the total number of ounces. If count per ounce averages within one-half kernel above the maximum or below the minimum range specified, three additional portions shall be counted and averaged with the first. When count per ounce is more than one-half kernel beyond the minimum or maximum specified or the average, using three additional portions, is outside the specified range, the lot fails to meet the count per ounce specified.

Example: $168 + 171 + 169 = 508 \div 24 = 21.17$

In this example, using 8 ounce samples, each portion was counted (168, 171 and 169 kernels) and the total was divided by the total number of ounces in all three samples (24 ounces). The count per ounce, in this case, is 21.17. This count, reported in hundredths of a kernel, falls within the 20/22 count range in the standards.

Determining the Fairly Uniform Ratio

§51.2131 Fairly uniform in size...means that, in a representative sample, the weight of 10 percent, by count, of the largest whole kernels shall not exceed 1.70 times the weight of 10 percent, by count, of the smallest whole kernels.

Kernels must not exceed the definition of fairly uniform in size in order to meet a count per ounce designation. To determine the ratio, 200, 300 or 400 whole kernels shall be separated from the sample used for grade analysis. Ten percent, by count, of the smallest whole kernels and 10 percent, by count, of the largest whole kernels shall be picked out and their respective weights recorded. Doubles shall be counted as whole kernels if they are not broken.

Divide the weight of the largest whole kernels by the weight of the smallest whole kernels.

EXAMPLE: $\frac{\text{Largest kernels} = 48.2\text{g}}{\text{Smallest kernels} = 32.6\text{g}} = 1.48 \text{ ratio.}$

If the ratio is 1.70 or lower, the lot meets "fairly uniform in size." If the ratio is between 1.71 and 1.75, an additional sample of equal size to the first shall be averaged with the first. If the ratio still exceeds 1.70, the lot cannot be considered "fairly uniform." If the initial ratio is 1.76 or higher the lot cannot be considered "fairly uniform."

Sizing by Diameter

§51.2130 Diameter...means the greatest dimension of the kernel, or piece of kernel at right angles to the longitudinal axis. Diameter shall be determined by passing the kernel or piece of kernel through a round opening.

Tolerances are applied on a weight basis. Diameter will seldom be specified, except in the U.S. No. 1 Whole and Broken grade or the U.S. No. 1 Pieces grade. When requested to determine minimum and maximum diameters, use a minimum of 500 grams of kernels. If the undersize or oversize tolerance is exceeded by a fraction of 1 percent, an additional 500 grams shall be sized and averaged with the first sample. If the original sample was more than 500 grams take the same amount as the original sample.

Remember that the minimum size in the U.S. No. 1 Pieces grade is 8/64 inch, unless otherwise specified. The standards define any material smaller than 8/64 inch as "particles and dust." However, in the U.S. No. 1 Pieces grade, undersize tolerances do not apply when size is specified at 8/64 inch or smaller. Review paragraphs on "Particles and Dust" for additional information.

Reporting Size

Count per ounce. When count per ounce is reported, the average shall be shown first and the compliance or non-compliance with the fairly uniform requirement next. Lots failing fairly uniform shall be reported as "irregular" and the ratio shown (see example).

Examples:

1. Average 21.53 kernels per ounce. Kernels fairly uniform.
2. Average 20.06 kernels per ounce. Kernels irregular. Ratio of 10 percent of largest whole kernels to 10 percent of smallest whole kernels is 1.93.

Diameter. When diameter is reported, the range, a mostly, and the undersize and oversize are shown.

Example:

1. Generally 10/64 to 32/64, mostly 12/64 to 18/64 inches in diameter. Average 1.32% under 10/64 inch in diameter. No oversize.

(7) Defects

§51.2127 Injury...means any defect which more than slightly detracts from the appearance of the individual almond.

§51.2128 Damage...means any defect which materially detracts from the appearance of the individual kernel, or the edible or shipping quality of the almonds.

§51.2129 Serious Damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

After size has been determined, return the kernels to the sample for analysis. Kernels affected by two or more defects are scored against the defect most seriously affected. If there are substantial number of kernels with two or more defects, the inspector must cross reference the defects.

Cleanness

§51.2118 Clean...means that the kernel is practically free from dirt and other foreign substance.

Each U.S. grade requires the kernels to be clean. Kernels are considered "dirty" when there is a sufficient amount of dirt or other foreign matter to materially affect the appearance of the kernel. When kernels are "dirty," score against the tolerance for "Other defects."

Dryness

§51.2119 Well Dried...means that the kernel is firm and brittle, not pliable or leathery.

All U.S. grades require the kernels to be well dried. Some varieties, even when properly dried, may have kernels which are slightly pliable, but in satisfactory condition. Kernels which are distinctly pliable or leathery shall be reported as "not well dried" and scored against the tolerance for "Other defects." If a kernel can be broken with the fingers without bending, it is considered sufficiently dry or "well dried."

Dissimilar Varieties and Mixed Varieties

§51.2116 Similar varietal characteristics...means that the kernels are similar in shape and appearance. For example, long types shall not be mixed with short types, or broad types mixed with narrow types, and bitter almonds shall not be mixed with sweet almonds. Color of the kernels shall not be considered, since there is often a marked difference in skin color of kernels of the same variety.

(a) When a lot is specified as "one type," all kernels shall be the same in shape and appearance; and,

(b) When a lot is specified and carton marked as "California," kernels present may include any one or a combination of blanchable varieties within the "California" Marketing Classification. In addition, Nonpareil or similar types may be included provided that it does not exceed twenty-five percent (25%), by weight, of the lot.

§51.2112 Mixed varieties...Any lot of shelled almonds designated as "one type" or designated as to type, which consists of a mixture of two or more dissimilar varieties which meet the other requirements of any of the grades of U.S. No. 1, U.S. Select Sheller Run, U.S. Standard Sheller Run, U.S. No. 1 Whole and Broken may be designated as: "U.S. No. 1 Mixed;" "U.S. Select Sheller Run Mixed;" "U.S. Standard Sheller Run Mixed;" "U.S. No. 1 Whole and Broken Mixed;" respectively, but no lot of any of these grades may include more than 1 percent of bitter almonds mixed with sweet almonds.

Shelled almonds are generally sold on the basis of variety, however, inspectors are not authorized to certify variety. The certificate shall state "Shelled ALMONDS." Requests for varietal certification shall be declined with an explanation that our regulations do not authorize certification of variety. Variety may be shown as a part of identifying marks or under "REMARKS" as a statement by applicant.

At times inspectors are requested to inspect manufactured or blanched almonds. Please refer to the information at the end of these instructions and contact supervisors for further information before proceeding.

Each U.S. grade, except U.S. No. 1 Pieces, requires similar varietal characteristics. U.S. No. 1 Pieces allows mixing dissimilar varieties, provided that bitter almonds are not mixed with sweet almonds. ¹Similar varietal characteristics means that the kernels are similar in shape and appearance. Long type almonds cannot be mixed with short types, broad types cannot be mixed with narrow types and bitter types cannot be mixed with sweet types. Only kernel shape and appearance (long versus short and broad versus oval or round) shall be considered when considering type characteristics. Skin color shall not be used for determining dissimilar varieties because the same variety can vary in color from one orchard or area to another.

Bitter almonds are normally used in the cooking and manufacturing industry in such items as food, cosmetics, flavoring and soaps. They are normally darker in color than sweet almonds and have a distinctly bitter taste. Inspectors suspecting that bitter almonds have been mixed with sweet almonds only have to taste one of the bitter almonds to know the facts.

Industry commonly markets almonds with container markings indicating either individual varieties or mixtures of several similar appearing varieties. The five established industry mixtures currently recognized are "Nonpareil," "California," "Mission," "NePlus Ultra," and "In-shell bleaching." Each is a separate group and may contain several to many varieties showing similar varietal characteristics. Under the U.S. grades, this is acceptable if the kernels have similar varietal characteristics and inspectors shall not attempt to segregate the mixture by variety. Varieties of one mixture are not normally mixed with varieties from another identified mixture. The exception is the "California" mixture. Industry recognizes that the "California" may contain up to 25% Nonpareils. The presence of the Nonpareils, while identifiable, shall not be considered as dissimilar unless the specific criteria for scoring dissimilar varieties is met.

¹ The U.S. standards may be applied to either type, sweet almonds or bitter almonds, however these two types can not be mixed together.

Nonpareil group* – In essence this group is the Nonpareil variety, which has the widest range of uses of all the marketing categories (from use as whole natural kernels to manufactured products). The attractive kernels are a medium shape and length, (width to length ratio of about 50%, representative length about 23mm) uniform, fairly flat and light (blond) colored.

California group* – This group may include the varieties Ballico, California, Davey, Harvey, Merced, Norman, Ruby, Thompson, Vesta and all other varieties that are similar to the varieties mentioned. In addition the variety Nonpareil may be included in the California group, so long as it does not exceed 25 percent by weight of the lot. All varieties in this group shall be **blanchable**. California varieties generally have a width to length ratio intermediate to the Nonpareil (50%) and the Mission (60%) and the representative length is from 20 to 24 mm. Varieties in the California group are normally an intermediate color between the blond Nonpareil and the brown Mission and the pellicles (skins) are not as smooth as Nonpareil nor as rough as Mission.

Mission group* – Mission type kernels are small, wide (width to length ratio about 60%) and often thick (plump) and their pellicles (skins) are brown. Blanching is not a criteria and, this group is handled principally as unblanched roasted salted nuts. A somewhat rough pellicle (defined as surface wrinkling with a fuzzy skin) apparently enhances salt and flavor adherence and is a desirable characteristic.

NePlus Ultra group* – This group is typified by NePlus Ultra and Jordanolo, which have traditionally been used for “panning” (in which the kernel is covered with a candy glaze). The NePlus kernel is large, long and narrow (a width to length ratio of about 45%, length about 27 mm). The kernel has a brown colored pellicle which is relatively rough and a disadvantage of NePlus is its propensity to produce double kernels.

Inshell group* – Peerless is the principal variety sold to consumers as a bleached inshell product. These inshell varieties are characterized by an attractive closed shell with a firm outer cork which both protects the kernel against worm damage and other contamination and also is responsive to bleaching.

* The definitions for Nonpareil, California, Mission, NePlus Ultra, and Inshell groups are adapted from “Almond Variety Update, 1985, by the Almond Board of California”

The following is the interpretation of the definition of Similar Varietal Characteristics (§51.2116) of the Shelled Almonds standards:

First, kernels must be **SIMILAR** in shape and appearance. In a mixture of several varieties, all kernels may have similar shape, size, and other characteristics even though the inspector may be able to identify the various varieties in the mix. The intent is to separate those kernels that are definitely dissimilar in varietal characteristics and not to segregate the kernels by individual variety.

If all kernels are similar type, regardless of whether or not the various varieties are definitely known, the almonds shall be considered as having similar varietal characteristics. In all cases, only those kernels definitely dissimilar to the other kernels in the sample shall be scored against the tolerance for dissimilar varieties (5% in all applicable grades). When the tolerance for dissimilar varieties is exceeded, the lot must be shown as either failing to meet grade requirements or the term "Mixed" must be used to qualify the grade. Depending upon the percentage of dissimilar varieties found, certify as: "U.S. No. 1," or "Fails to grade U.S. No. 1 account dissimilar varieties" or "Fails to grade U.S. No. 1 account dissimilar varieties, now grades U.S. No. 1 Mixed" or "U.S. No. 1 Mixed."

Almond shipments may be designated by the applicant as **one type**. This means that the kernels must be the **SAME** in shape and appearance. In effect, they must be the same variety, however the inspection service does not certify variety. Therefore, the inspector must use the characteristics of the kernel – shape and appearance. Kernels that are not the **same** as other kernels in the sample shall be scored as "dissimilar" and the tolerance for "dissimilar varieties" shall apply. Depending upon the percentage of dissimilar varieties found, certify as: "U.S. No. 1 One Type" or "Fails to grade U.S. No. 1 One Type account of dissimilar varieties," or "Fails to grade U.S. No. 1 One Type account of dissimilar varieties, now grades U.S. No. 1 Mixed" or "U.S. No. 1 Mixed."

All lots marked "**California**" may consist of several varieties of almonds. The kernels in the lot may show a wide range of shapes and sizes (width to length ratios may vary from 43 to 56%, length from 20 to 27 mm, and the color of the skins may vary from light colored to medium to brown color). Despite this diversity, the almonds must be **blanchable**. Therefore, the main concern for the inspector when grading almonds marked "California" will be almonds of the Nonpareil group (see previous description) and bitter almonds. Although the Nonpareil group may be present in the lot, they cannot exceed 25%, by weight, and the lot may not have more than 1% bitter almonds. Certify as "U.S. No. 1 California" or "Fails to grade U.S. No. 1 California account dissimilar varieties," based on the facts.

In summary, lots may contain different varieties and still meet the specified grade requirements. However, not more than 5% dissimilar varieties (long type versus short type, etc.) are permitted in any U.S. grade except U.S. No. 1 Pieces (allows mixing of the varieties, but not more than 1 percent bitter almonds mixed with sweet almonds). If qualified by the term "Mixed," the grade may have two or more dissimilar varieties, except not more than 1 percent of bitter almonds mixed with sweet almonds. When cartons are marked and inspected according to the "California" designation, they may contain several different varieties, so long as they are blanchable varieties, almonds from the Nonpareil group do not exceed 25 percent by weight, and not more than 1% bitter almonds may be mixed with sweet almonds.

Doubles

§51.2124 Doubles...means kernels that developed in shells containing two kernels. One side of a double kernel is flat or concave.

Doubles are scored against all grades except U.S. No. 1 Pieces. Kernels that are both doubles and affected by chipping and scratching are always scored as doubles against the tolerance for "doubles." Kernels that are both doubles and are split and broken are always scored as split and broken against the tolerance for "split and broken."

Chipped and Scratched Kernels

§51.2127 Injury...(a) Chipped and scratched kernels when the affected area on an individual kernel aggregates more than the equivalent of a circle one-eighth inch (3.2 mm) in diameter.

§51.2128 Damage...(a) Chipped and scratched kernels, when the affected area on an individual kernel aggregates more than the equivalent of a circle one-quarter inch (6.4 mm) in diameter.

U.S. Fancy almonds must be free from **injury** by chipping and scratching. U.S. Extra No. 1, U.S. No. 1, U.S. Select Sheller Run and U.S. Standard Sheller Run almonds must be free from **damage** by chipping and scratching. U.S. No. 1 Whole and Broken, and U.S. No. 1 Pieces grades have **no requirements** for chipping and scratching.

All individual kernels which are chipped or scratched more than the area permitted by the grade shall be scored as a defect against the separate tolerance for "Chipping and/or Scratching." In determining the area affected, the total combined area of chipped and scratched surface shall be used.

Kernels that are both doubles and affected by chipping and scratching are always scored as doubles against the tolerance for doubles.

The U.S. Standards Sheller Run grade allows 35% for chipped and scratched kernels, provided that not more than 15% of this amount shall be allowed for split and broken kernels. Therefore, a lot could have 35% of the kernels chipped and scratched with 0% split and broken and still meet the U.S. Standard Sheller Run grade; 20% chipped and scratched and 15% split and broken would also meet the grade.

Split and Broken Kernels

§51.2117 Whole...means that there is less than one-eighth of the kernel chipped off or missing, and that the general contour of the kernel is not materially affected by the missing part.

§51.2125 Split or broken kernels...means seven-eighths or less of complete whole kernels but which will not pass through a round opening 8/64 of an inch (3.2 mm) in diameter.

Split and broken kernels are scored against all grades except U.S. No. 1 Whole and Broken and U.S. No. 1 Pieces. A 1% tolerance for split and broken kernels is allowed in the U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1 grades, which is included in the "Other defects" tolerance.

The U.S. Select Sheller Run grade allows 5% for split and broken kernels, provided that not more than 2% shall be allowed for pieces which will pass through a round opening 20/64 of an inch in diameter.

The U.S. Standard Sheller Run grade allows 15% for split and broken kernels, provided that not more than 5% shall be allowed for pieces which will pass through a round opening 20/64 of an inch in diameter.

Kernels that are both doubles and that are split and broken are always scored as split and broken against the tolerance for split and broken.

Mold

§51.2128 Damage...(b) Mold, when visible on the kernel, except when white or gray and easily rubbed off with the fingers.

§51.2129 Serious damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

The standards define damage by mold, which is also included in the definition for serious damage. Therefore, any attached mold which is conspicuous shall be scored as **serious damage** against the restricted tolerance for "Serious damage." White or gray mold that can be easily rubbed off with the fingers shall be ignored.

Gum

§51.2128 Damage...(c) Gum, when a film of shiny, resinous appearing substance affects an area aggregating more than the equivalent of a circle one-quarter inch (6.4 mm) in diameter.

Gum affects all varieties, but some are more susceptible to it than others. Gum appears as shiny resinous substance, which exudes from the almond when it is injured during the growing process. Affected kernels generally have a sweeter taste than non-affected ones. Kernels that are damaged by gum shall be scored against the tolerance for "Other defects." Gum affecting lesser areas than described above shall be ignored.

Shriveling

§51.2128 Damage...(d) Shriveling, when the kernel is excessively thin for its size, or when materially withered, shrunken, leathery, tough or only partially developed: Provided, that partially developed kernels are not considered damaged if more than three-fourths of the pellicle is filled with meat.

Most lots contain kernels that show various degrees of shriveling. Some varieties may show more or less fine wrinkling, than other varieties. Kernels harvested from trees that have been irrigated regularly will show fewer shriveled kernels than from trees that are irrigated irregularly or those that are "dry farmed." Abnormally hot weather can also cause various degrees of shriveling.

The U.S. standards provide for three separate ways to score kernels as damage by shriveling.

Excessively thin: Kernels may be considered excessively thin for their size when the meat content, in a cross section of the kernel across the middle part, has less than approximately 1/4 of the volume found on a normal kernel. Thin kernels shall be compared with unaffected kernels in the lot in order to verify that the kernels are indeed excessively thin. The graphic below shows a cross section of what would be considered a normal meaty kernel and one that is excessively thin in relation to its size.



Materially withered, shrunken, or tough: Scoring kernels that are withered, shrunken, or tough is highly subjective. It is natural for kernels to have some degree of withering or shrunken appearance. Inspectors shall exercise caution when scoring shriveled almonds. The kernel shall be considered damaged when the withering or shrinking is sufficient to cause material amounts of wrinkling on most of the surface of the kernel and score against the tolerance for "Other defects." Shallow to moderate wrinkling of the surface is not considered damage.

(Kernels that are pliable or leathery shall be reported as "not well dried." See section on dryness.)

Partially developed: Some kernels do not develop normally during the growing process. They may be somewhat deformed or have undeveloped portions where only the pellicle is present, but no meat. If less than 3/4 of the pellicle is filled with meat, the kernel is considered damaged and scored against the tolerance for "Other defects."

Shriveling found in nuts containing "doubles" or two kernels, shall be judged on the basis of the better developed of the two kernels, regardless of how badly shriveled the other kernel may be. The definition of damage shall be applied to the better portion of the kernel and scored accordingly.

Brown Spot on the Kernel

§51.2128 Damage...(e) Brown Spot on the Kernel, either single or multiple, when the affected area aggregates more than the equivalent of a circle one-eighth inch (3.2 mm) in diameter.

This defect is thought to be caused by sucking type insects feeding on almonds in early stages of development. It occurs as one or more brown spots varying in size from less than 1/8 to 3/8 inch or more in diameter. Frequently the spots are sunken. The flavor of the kernels that are only slightly affected by brown spots are not noticeably changed, but more severely affected kernels may be distinctly bitter. All grades specify free from damage by brown spot. This means a kernel or piece of kernel is not to be scored as a defect unless a total area (aggregate) more than the equivalent of a circle 1/8 inch in diameter is affected by a light brown or darker discoloration. Score this defect against the tolerance for "Other defects."

Insect Injury

§51.2122 Insect Injury...means that the insect, web or frass is present or there is definite evidence of insect feeding.

§51.2129 Serious damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

Insect injury on kernels is frequently hard to detect. Inspectors shall carefully analyze kernels so that minute holes, sometimes called "pinholes," made by the navel orangeworm are not overlooked. Any insect injury, ranging in degree from pinholes to large trails or tunnels is serious damage and scored against the "Serious damage" tolerance (which is included in the "Other defects" tolerance). Kernels affected by the presence of insects, webbing, frass or evidence of insect feeding are also considered serious damage.

Live or dead insects or insect fragments present in the sample for analysis, but not attached to kernels (loose insects) shall be scored and reported as foreign material; score against the tolerance for "foreign material."

Skin Discoloration

§51.2128 Damage...(f) Skin Discoloration when more than one-half of the surface of the kernel is affected by very dark or black stains contrasting with the natural color of the skin.

Skin discoloration may appear in various forms and colors. It may have sharply defined margins or may have margins that blend into the natural color of the skin. It is scored when there is a very dark or black stain in contrast with the natural skin color of the almond and it affects more than one-half of the surface of the kernel. Damage by skin discoloration is scored against the tolerance for "Other defects."

Embedded Shell/Embedded Foreign Material

During the shelling process, some kernels may become punctured by shell material that remains lodged in the kernel. This is referred to as "embedded shell." Other foreign material may also become embedded in the kernel, this is referred to as "embedded foreign material." These are considered a kernel defect, and any amount of shell or foreign material embedded in the kernel is considered a defect. Do not remove the shell or foreign material from the kernel. The entire weight of the kernel and shell or foreign material causing it to be defective is scored as damage against the tolerance for "Other defects." Embedded shell or embedded foreign material shall not be scored as serious damage.

Decay and Rancidity

§51.2120 Decay...means that part or all of the kernel has become decomposed.

§51.2121 Rancidity...means that the kernel is noticeably rancid to the taste.

§51.2129 Serious damage...means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

**** Almonds that are properly dried almonds seldom develop decay or become rancid. However, if held in common storage and subjected to high temperatures and humidity, decay or rancidity may develop. Kernels showing decay or rancidity are scored against the restricted tolerance, for serious damage, of 1-1/2 percent.

Rancid kernels show yellow to brown to gray discoloration of the flesh. The flesh may appear oily, watersoaked or dry and crumbly and often with a disagreeable odor and flavor. Tasting the kernels may be a part of the inspection process when rancid kernels are in the lot. Inspectors shall only taste test suspected kernels until they have established the visual characteristics which set aside the rancid kernels from the non-rancid kernels in the lot. Do not confuse a stale or flat flavor with rancidity. If a decayed or rancid kernel is also affected by another defect (such as split and broken, chipped and scratched, etc.), score the kernel as decay or rancid.

(8) Grade

Under this heading a statement shall be made showing whether or not the lot(s) inspected meet the requirements of the grade. Other specifications for which the application was based may also be reported here.

(9) Remarks

Show under "REMARKS" any pertinent information that might affect the marketability or inspection of the lot, but does not fit under any other headings. Export markings may also be shown here.

Manufactured and Blanched Almonds

When requested, inspectors may inspect manufactured or blanched almonds.

Generally, requested inspections are to be based on company or sales contracts. These may vary in application and completeness. Inspectors must obtain and thoroughly review a **written** copy of such specifications before attempting to complete such an inspection for an applicant. Any questionable areas of the intent of the specification must be discussed with the applicant and a **written** resolution issued.

Inspectors may inspect all forms of manufactured almonds, **except** those forms coated with products such as honey, yogurt or caramel. Manufactured forms may include roasted, salted, sliced, diced or flavored.

Blanched forms are when the outer brown skin has been removed, leaving the white meat of the kernel exposed. Nearly all varieties of almonds are able to be blanched, but some are more readily and quickly blanched than others.

The U.S. No. 1 Whole & Broken and the U.S. No. 1 Pieces grades in the U.S. standards may be used to certify blanched almonds. This is because there is no requirement in these grades for chipping and scratching to be a defect.

Sampling and inspection procedures applied to "natural" almonds (as detailed in the preceding pages of these instructions) shall be followed in completing an inspection of manufactured or blanched almonds.

Appendix I

U.S. Standards





United States
Department of
Agriculture

Agricultural
Marketing
Service

Fruit and
Vegetable
Programs

Fresh
Products
Branch

United States Standards for Grades of Almonds in the Shell

Effective March 24, 1997
(Reprinted - March 1997)

United States Standards for Grades of Almonds in the Shell

Grades

51.2075 U.S. No. 1.

51.2076 U.S. No. 1 Mixed.

51.2077 U.S. No. 2.

51.2078 U.S. No. 2 Mixed.

Application of Tolerances

51.2079 Application of tolerances.

Determination of Grade

51.2080 Determination of grade.

Definitions

51.2081 Similar varietal characteristics.

51.2082 Loose extraneous and foreign material.

51.2083 Clean.

51.2084 Fairly bright.

51.2085 Fairly uniform color.

51.2086 Well dried.

51.2087 Decay.

51.2088 Rancidity.

51.2089 Damage.

51.2090 Serious damage.

51.2091 Thickness.

Grades

§51.2075 U.S. No. 1.

"U.S. No. 1" consists of almonds in the shell which are of similar varietal characteristics and free from loose extraneous and foreign material. The shells are clean, fairly bright, fairly uniform color, and free from damage caused by discoloration, adhering hulls, broken shells or other means. The kernels are well dried, free from decay, rancidity, and free from damage caused by insects, mold, gum, skin discoloration, shriveling, brown spot or other means.

(a) Unless otherwise specified, the almonds are of a size not less than 28/64 of an inch (11.1 mm) in thickness.

(b) In order to allow for variations incident to proper grading and handling, the following tolerances are provided as specified:

(1) **For external (shell) defects.** 10 percent, by count, for almonds which fail to meet the requirements of this grade other than for variety and size;

(2) **For dissimilar varieties.** 5 percent, by count, including therein not more than 1 percent for bitter almonds mixed with sweet almonds;

(3) **For size.** 5 percent, by count, for almonds which are smaller than the specified minimum thickness;

(4) **For loose extraneous and foreign material.** 2 percent, by weight, including therein not more than 1 percent which can pass through a round opening 24/64 inch (9.5 mm) in diameter: Provided, that such material is practically free from insect infestation; and,

(5) **For internal (kernel) defects.** 10 percent, by count, for almonds with kernels failing to meet the requirements of this grade: Provided, that not more than one-half of this tolerance or 5 percent shall be allowed for kernels affected by decay or rancidity, damaged by insects or mold or seriously damaged by shriveling: And provided further, that no part of this tolerance shall be allowed for live insects inside the shell.

§51.2076 U.S. No. 1 Mixed.

"U.S. No. 1 Mixed" consists of almonds in the shell which meet the requirements of U.S. No. 1 grade, except that two or more varieties of sweet almonds are mixed.

§51.2077 U.S. No. 2.

"U.S. No. 2" consists of almonds in the shell which meet the requirements of U.S. No. 1 grade, except that an additional tolerance of 20 percent shall be allowed for almonds with shells damaged by discoloration.

§51.2078 U.S. No. 2 Mixed.

"U.S. No. 2 Mixed" consists of almonds in the shell which meet the requirements of U.S. No. 2 grade, except that two or more varieties of sweet almonds are mixed.

Application of Tolerances

§51.2079 Application of tolerances.

The tolerances for the foregoing grades are applied to the entire lot of almonds, based upon a composite sample drawn from containers throughout the lot.

Determination of Grade

§51.2080 Determination of grade.

In grading the inspection sample, the percentage of loose hulls, pieces of shell, chaff and foreign material is determined on the basis of weight. Next, the percentages of nuts which are of dissimilar varieties, undersize or have adhering hulls or defective shells are determined by count, using an adequate portion of the total sample. Finally, the nuts in that portion of the sample are cracked, and the percentage having internal defects is determined on the basis of count.

Definitions

§51.2081 Similar varietal characteristics.

"Similar varietal characteristics" means that the almonds are similar in shape, and are reasonably uniform in degree of hardness of the shells, and that bitter almonds are not mixed with sweet almonds. For example, hard-shelled varieties, semi-soft shelled varieties, soft-shelled varieties and paper-shelled varieties are not mixed together, nor are any two of these types mixed under this definition.

§51.2082 Loose extraneous and foreign material.

"Loose extraneous and foreign material" means loose hulls, empty broken shells, pieces of shells, external insect infestation and any substance other than almonds in the shell or almond kernels.

§51.2083 Clean.

"Clean" means that the shell is practically free from dirt and other adhering foreign material.

§51.2084 Fairly bright.

"Fairly bright" means that the shells show good characteristic color.

§51.2085 Fairly uniform color.

"Fairly uniform color" means that the shells do not show excessive variation in color, whether bleached or natural.

§51.2086 Well dried.

"Well dried" means that the kernel is firm and brittle, not pliable or leathery.

§51.2087 Decay.

"Decay" means that part or all of the kernel has become decomposed.

§51.2088 Rancidity.

"Rancidity" means that the kernel is noticeably rancid to taste.

§51.2089 Damage.

"Damage" means any defect which materially detracts from the appearance of the individual kernel, or the edible or shipping quality of the almond. Any one of the following defects or combination thereof, the seriousness of which exceeds the maximum allowed for any one defect shall be considered as damage:

- (a) Discoloration of the shell which is medium gray to black and affects more than one-eighth of the surface in the aggregate. Normal variations of a reddish or brownish color shall not be considered discoloration;
- (b) Adhering hulls which cover more than 5 percent of the shell surface in the aggregate;
- (c) Broken shells when a portion of the shell is missing, or the shell is broken or fractured to the extent that moderate pressure will permit the kernel to become dislodged;
- (d) Insect injury when the insect, web or frass is present or there is definite evidence of insect feeding;
- (e) Mold, when visible on the kernel, except when white or gray and easily rubbed off with the fingers;
- (f) Gum, when a film of shiny, resinous appearing substance affects an area aggregating more than the equivalent of a circle one-quarter inch (6.4 mm) in diameter;
- (g) Skin discoloration when more than one-half of the surface of the kernel is affected by very dark or black stains contrasting with the natural color of the skin;
- (h) Shriveling when the kernel is excessively thin for its size, or when materially withered, shrunken, leathery, tough or only partially developed: Provided, that partially developed kernels are not considered damaged if more than three-fourths of the pellicle is filled with meat. An almond containing two kernels shall not be classed as damaged if either kernel has more than three-fourths of the pellicle filled with meat; and,
- (i) Brown spot which affects an aggregate area on the kernel greater than the area of a circle one-eighth inch (3.2 mm) in diameter.

§51.2090 Serious damage.

"Serious damage" means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold. The following defect shall be considered as serious damage: Shriveling when the kernel is seriously withered, shrunken, leathery, tough or only partially developed: Provided, that partially developed kernels are not considered seriously damaged if more than one-fourth of the pellicle is filled with meat.

§51.2091 Thickness.

"Thickness" means the greatest dimension between the two semi-flat surfaces of the shell measured at right angles to a plane extending between the seams of the shell.



**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Fruit and
Vegetable
Programs**

**Fresh
Products
Branch**

United States Standards for Grades of Shelled Almonds

Effective March 24, 1997
(Reprinted - March 1997)

United States Standards for Grades of Shelled Almonds

Grades

- 51.2105 U.S. Fancy.
- 51.2106 U.S. Extra No. 1.
- 51.2107 U.S. No. 1.
- 51.2108 U.S. Select Sheller Run.
- 51.2109 U.S. Standard Sheller Run.
- 51.2110 U.S. No. 1 Whole and Broken.
- 51.2111 U.S. No. 1 Pieces.

Mixed Varieties

- 51.2112 Mixed varieties.

Size

- 51.2113 Size requirements.
- 51.2114 Tolerances for size.

Application of Tolerances

- 51.2115 Application of tolerances.

Definitions

- 51.2116 Similar varietal characteristics.
- 51.2117 Whole.
- 51.2118 Clean.
- 51.2119 Well dried.
- 51.2120 Decay.
- 51.2121 Rancidity.
- 51.2122 Insect injury.
- 51.2123 Foreign material.
- 51.2124 Doubles.
- 51.2125 Split or broken kernels.
- 51.2126 Particles and dust.
- 51.2127 Injury.
- 51.2128 Damage.
- 51.2129 Serious damage.
- 51.2130 Diameter.
- 51.2131 Fairly uniform in size.

Grades

§51.2105 U.S. Fancy.

"U.S. Fancy" consists of shelled almonds of similar varietal characteristics which are whole, clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, doubles, split or broken kernels, particles and dust, and free from injury caused by chipped and scratched kernels, and free from damage caused by mold, gum, shriveling, brown spot or other

means. (See §§51.2113 and 51.2114.)

In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

- (a) **For dissimilar varieties.** 5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds;
- (b) **For doubles.** 3 percent;
- (c) **For kernels injured by chipping and/or scratching.** 5 percent;
- (d) **For foreign material.** One-twentieth of 1 percent (0.05 percent). No part of this percentage shall be allowed for glass and metal;
- (e) **For particles and dust.** One-tenth of 1 percent (0.10 percent); and,
- (f) **For other defects.** 2 percent, including not more than one-half of this amount, or 1 percent, for split or broken kernels, and including not more than one-half of the former amount, or 1 percent, for seriously damaged kernels.

§51.2106 U.S. Extra No. 1.

"U.S. Extra No. 1" consists of shelled almonds of similar varietal characteristics which are whole, clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, doubles, split or broken kernels, particles and dust, and free from damage caused by chipped and scratched kernels, mold, gum, shriveling, brown spot or other means. (See §§51.2113 and 51.2114.)

In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

- (a) **For dissimilar varieties.** 5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds;
- (b) **For doubles.** 5 percent;
- (c) **For kernels damaged by chipping and/or scratching.** 5 percent;
- (d) **For foreign material.** One-twentieth of 1 percent (0.05 percent). No part of this percentage shall be allowed for glass and metal;
- (e) **For particles and dust.** One-tenth of 1 percent (0.10 percent); and,
- (f) **For other defects.** 4 percent, including not more than one-fourth of this amount, or 1 percent, for split or broken kernels, and including not more than three-eighths of the former amount, or 1-1/2 percent, for seriously damaged kernels.

§51.2107 U.S. No. 1.

"U.S. No. 1" consists of shelled almonds of similar varietal characteristics which are whole, clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, doubles, split or broken kernels, particles and dust, and free from damage caused by chipped and scratched kernels, mold, gum, shriveling, brown spot or other means. (See §§51.2113 and 51.2114.)

In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

- (a) **For dissimilar varieties.** 5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds;
- (b) **For doubles.** 15 percent;
- (c) **For kernels damaged by chipping and/or scratching.** 10 percent;

(d) **For foreign material.** One-twentieth of 1 percent (0.05 percent). No part of this percentage shall be allowed for glass and metal;

(e) **For particles and dust.** One-tenth of 1 percent (0.10 percent); and,

(f) **For other defects.** 5 percent including not more than one-fifth of this amount, or 1 percent, for split or broken kernels, and including not more than three-tenths of the former amount, or 1-1/2 percent, for seriously damaged kernels.

§51.2108 U.S. Select Sheller Run.

"U.S. Select Sheller Run" consists of shelled almonds of similar varietal characteristics which are whole, clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, doubles, split or broken kernels, particles and dust, and free from damage caused by chipped and scratched kernels, mold, gum, shriveling, brown spot or other means. (See §§51.2113 and 51.2114.)

In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

(a) **For dissimilar varieties.** 5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds;

(b) **For doubles.** 15 percent;

(c) **For kernels damaged by chipping and/or scratching.** 20 percent;

(d) **For foreign material.** One-tenth of 1 percent (0.10 percent). No part of this percentage shall be allowed for glass and metal;

(e) **For particles and dust.** One-tenth of 1 percent (0.10 percent);

(f) **For split and broken kernels.** 5 percent: Provided, that not more than two-fifths of this amount, or 2 percent, shall be allowed for pieces which will pass through a round opening 20/64 inch (7.9 mm) in diameter; and,

(g) **For other defects.** 3 percent, including not more than two-thirds of this amount, or 2 percent, for serious damage.

§51.2109 U.S. Standard Sheller Run.

"U.S. Standard Sheller Run" consists of shelled almonds of similar varietal characteristics which are whole, clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, doubles, split or broken kernels, particles and dust, and free from damage caused by chipped and scratched kernels, mold, gum, shriveling, brown spot or other means. (See §§51.2113 and 51.2114.)

In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

(a) **For dissimilar varieties.** 5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds;

(b) **For doubles.** 25 percent;

(c) **For kernels damaged by chipping and/or scratching or split and broken.** 35 percent; Provided, that not more than three-sevenths of this amount, or 15 percent, shall be allowed for split and broken: And Provided Further, that not more than one-third of this latter amount, or 5 percent, shall be allowed for pieces which will pass through a round opening 20/64 inch (7.9 mm) in diameter;

(d) **For foreign material.** Two-tenths of 1 percent (0.20 percent). No part of this percentage

shall be allowed for glass and metal;

(e) **For particles and dust.** One-tenth of 1 percent (0.10 percent); and,

(f) **For other defects.** 3 percent, including not more than two-thirds of this amount, or 2 percent, for serious damage.

§51.2110 U.S. No. 1 Whole and Broken.

"U.S. No. 1 Whole and Broken" consists of shelled almonds of similar varietal characteristics which are clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, doubles, particles and dust, and free from damage caused by mold, gum, shriveling, brown spot or other means.

(a) In this grade not less than 30 percent, by weight, of the kernels shall be whole. Doubles shall not be considered as whole kernels in determining the percentage of whole kernels.

(b) Unless otherwise specified, the minimum diameter shall be not less than 20/64 of an inch (7.9 mm). (See §§51.2113 and 51.2114.)

(c) In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

(1) **For dissimilar varieties.** 5 percent, including not more than one-fifth of this amount, or 1 percent, for bitter almonds mixed with sweet almonds;

(2) **For doubles.** 35 percent;

(3) **For foreign material.** Two-tenths of 1 percent (0.20 percent). No part of this percentage shall be allowed for glass and metal;

(4) **For particles and dust.** One-tenth of 1 percent (0.10 percent);

(5) **For undersize.** 5 percent; and,

(6) **For other defects.** 5 percent, including not more than three-fifths of this amount, or 3 percent, for serious damage.

§51.2111 U.S. No. 1 Pieces.

"U.S. No. 1 Pieces" consists of shelled almonds which are not bitter, which are clean and well dried, and which are free from decay, rancidity, insect injury, foreign material, particles and dust, and free from damage caused by mold, gum, shriveling, brown spot or other means.

(a) Unless otherwise specified, the minimum diameter shall be not less than 8/64 of an inch (3.2 mm). (See §§51.2113 and 51.2114.)

(b) In order to allow for variations incident to proper grading and handling, the following tolerances, by weight, shall be permitted:

(1) **For bitter almonds mixed with sweet almonds.** 1 percent;

(2) **For foreign material.** Two-tenths of 1 percent (0.20 percent). No part of this percentage shall be allowed for glass and metal;

(3) **For particles and dust.** 1 percent; and

(4) **For other defects.** 5 percent, including not more than three-fifths of this amount, or 3 percent, for serious damage.

Mixed Varieties

§51.2112 Mixed varieties.

Any lot of shelled almonds designated as "one type" or undesignated as to type, which consists of a mixture of two or more dissimilar varieties which meet the other requirements of any of the grades of U.S. No. 1, U.S. Select Sheller Run, U.S. Standard Sheller Run, U.S. No. 1 Whole and

Broken may be designated as: "U.S. No. 1 Mixed;" "U.S. Select Sheller Run Mixed;" "U.S. Standard Sheller Run Mixed;" "U.S. No. 1 Whole and Broken Mixed;" respectively; but no lot of any of these grades may include more than 1 percent of bitter almonds mixed with sweet almonds.

Size

§51.2113 Size requirements.

The size may be specified in terms of range in count of whole almond kernels per ounce or in terms of minimum, or minimum and maximum diameter. When a range in count is specified, the whole kernels shall be fairly uniform in size, and the average count per ounce shall be within the range specified. Doubles and broken kernels shall not be used in determining counts. Count ranges per ounce commonly used are shown below, but other ranges may be specified: Provided, that the kernels are fairly uniform in size.

Count Range per Ounce

16 to 18, inclusive.
18 to 20, inclusive.
20 to 22, inclusive.
22 to 24, inclusive.
23 to 25, inclusive.
24 to 26, inclusive.
26 to 28, inclusive.
27 to 30, inclusive.
30 to 34, inclusive.
34 to 40, inclusive.
40 to 50, inclusive.
50 and smaller.

§51.2114 Tolerances for size.

- (a) When a range is specified as, for example, "18/20," no tolerance for counts above or below the range shall be allowed.
- (b) When the minimum, or minimum and maximum diameter are specified, a total tolerance of not more than 10 percent, by weight, may fail to meet the specified size requirements: Provided, that not more than one-half of this amount, or 5 percent, may be below the minimum size specified.

Application of Tolerances

§51.2115 Application of tolerances.

The tolerances for the grades are to be applied to the entire lot, and a composite sample shall be taken for determining the grade. However, any container or group of containers in which the almonds are found to be materially inferior to those in the majority of the containers shall be considered a separate lot.

Definitions

§51.2116 Similar varietal characteristics.

"Similar varietal characteristics" means that the kernels are similar in shape and appearance. For

example, long types shall not be mixed with short types, or broad types mixed with narrow types, and bitter almonds shall not be mixed with sweet almonds. Color of the kernels shall not be considered, since there is often a marked difference in skin color of kernels of the same variety.

(a) When a lot is specified as "one type," all kernels shall be the same in shape and appearance; and,

(b) When a lot is specified and carton marked as "California," kernels present may include any one or a combination of blanchable varieties within the "California" Marketing Classification. In addition, Nonpareil or similar types may be included provided that it does not exceed twenty-five percent (25%), by weight, of the lot.

§51.2117 Whole.

"Whole" means that there is less than one-eighth of the kernel chipped off or missing, and that the general contour of the kernel is not materially affected by the missing part.

§51.2118 Clean.

"Clean" means that the kernel is practically free from dirt and other foreign substance.

§51.2119 Well dried.

"Well dried" means that the kernel is firm and brittle, and not pliable or leathery.

§51.2120 Decay.

"Decay" means that part or all of the kernel has become decomposed.

§51.2121 Rancidity.

"Rancidity" means that the kernel is noticeably rancid to the taste.

§51.2122 Insect injury.

"Insect injury" means that the insect, web, or frass is present or there is definite evidence of insect feeding.

§51.2123 Foreign material.

"Foreign material" means pieces of shell, hulls or other foreign matter which will not pass through a round opening 8/64 of an inch (3.2 mm) in diameter.

§51.2124 Doubles.

"Doubles" means kernels that developed in shells containing two kernels. One side of a double kernel is flat or concave.

§51.2125 Split or broken kernels.

"Split or broken kernels" means seven-eighths or less of complete whole kernels but which will not pass through a round opening 8/64 of an inch (3.2 mm) in diameter.

§51.2126 Particles and dust.

"Particles and dust" means fragments of almonds kernels or other material which will pass through a round opening 8/64 of an inch (3.2 mm) in diameter.

§51.2127 Injury.

"Injury" means any defect which more than slightly detracts from the appearance of the individual almond. The following shall be considered as injury:

(a) Chipped and scratched kernels when the affected area on an individual kernel aggregates more than the equivalent of a circle one-eighth inch (3.2 mm) in diameter.

§51.2128 Damage.

"Damage" means any defect which materially detracts from the appearance of the individual kernel, or the edible or shipping quality of the almonds. Any one of the following defects or

combination thereof, the seriousness of which exceeds the maximum allowed for any one defect shall be considered as damage:

- (a) Chipped and scratched kernels, when the affected area on an individual kernel aggregates more than the equivalent of a circle one-quarter inch (6.4 mm) in diameter;
- (b) Mold, when visible on the kernel, except when white or gray and easily rubbed off with the fingers.
- (c) Gum, when a film of shiny, resinous appearing substance affects an area aggregating more than the equivalent of a circle one-quarter inch (6.4 mm) in diameter;
- (d) Shriveling, when the kernel is excessively thin for its size, or when materially withered, shrunken, leathery, tough or only partially developed: Provided, that partially developed kernels are not considered damaged if more than three-fourths of the pellicle is filled with meat;
- (e) Brown spot on the kernel, either single or multiple, when the affected area aggregates more than the equivalent of a circle one-eighth inch (3.2 mm) in diameter; and,
- (f) Skin discoloration when more than one-half of the surface of the kernel is affected by very dark or black stains contrasting with the natural color of the skin.

§51.2129 Serious damage.

"Serious damage" means any defect which makes a kernel or piece of kernel unsuitable for human consumption, and includes decay, rancidity, insect injury and damage by mold.

§51.2130 Diameter.

"Diameter" means the greatest dimension of the kernel, or piece of kernel at right angles to the longitudinal axis. Diameter shall be determined by passing the kernel or piece of kernel through a round opening.

§51.2131 Fairly uniform in size.

"Fairly uniform in size" means that, in a representative sample, the weight of 10 percent, by count, of the largest whole kernels shall not exceed 1.70 times the weight of 10 percent, by count, of the smallest whole kernels.

Appendix II

Certificate & Notesheet Examples





U. S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 FRUIT AND VEGETABLE DIVISION
NOTICE OF SAMPLING
 (FOR GRADE OR CHEMICAL ANALYSIS)

Z - 1

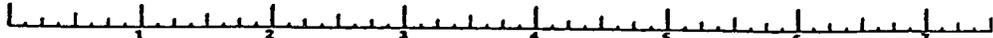
DATE SAMPLING BEGAN

THIS IS TO CERTIFY that in compliance with the regulations of the Secretary of Agriculture governing the inspection of fruits, vegetables, and nuts pursuant to the Agricultural Marketing Act of 1946 (as amended) (7 U.S.C. 1621 et seq.) the undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that the data indicated samples drawn believed by me to be representative of the lot were as described below.

SAMPLE DRAWN AT: (city, state) <i>Some, State</i>		MILL OR WAREHOUSE NAME: <i>Some Nut Co.</i>		SAMPLING FOR: <input checked="" type="checkbox"/> Grade <input type="checkbox"/> Chemical Analysis	
<input type="checkbox"/> CAR NO.:		<input type="checkbox"/> TRUCK NO.:		<input type="checkbox"/> NAME OF SHIP:	
APPLICANT (Name, Address, Zip Code): <i>Some Nut Co. Some, State</i>		RECEIVER (Name, Address): <i>My Candy Co. Someplace, Ill.</i>		SHIPPER (Name, Address): <i>Some Nut Co. Some, State.</i>	
PRODUCT - PEANUTS <input type="checkbox"/> CLEANED IN THE SHELL PEANUTS <input type="checkbox"/> SHELLED PEANUTS		DESIGNATED AS TYPE: <input type="checkbox"/> "RUNNER" <input checked="" type="checkbox"/> "VIRGINIA" <input type="checkbox"/> "SPANISH" <input type="checkbox"/> "VALENCIA"		CONTRACT NO.: <i>X</i>	
WT. MANIFESTED AS: <input checked="" type="checkbox"/>	NUMBER OF <input checked="" type="checkbox"/> SACKS <input type="checkbox"/> BINS	COLOR TAGS: <input checked="" type="checkbox"/>	CROP YEAR: <input checked="" type="checkbox"/>	STATE: <input checked="" type="checkbox"/>	MILL NO.: <input checked="" type="checkbox"/>
QUALITY DESIGNATED BY SHIPPER (verbal or marked):			GRADE INSPECTION CERTIFICATE NO.:	DESIGNATED QUALITY: <input type="checkbox"/> MEETS <input type="checkbox"/> FAILS	
CHECK HIGHEST QUALITY DETERMINED: <input type="checkbox"/> RUNNER NO. 1 OR BETTER <input type="checkbox"/> SPANISH NO. 1 OR BETTER <input type="checkbox"/> VIRGINIA NO. 1 OR BETTER		<input type="checkbox"/> P.A.C. WITH SPLITS* <input type="checkbox"/> U.S. SPLITS <input type="checkbox"/> OTHER EDIBLE QUALITY* <input type="checkbox"/> FAILS *OTHER EDIBLE QUALITY*		<input type="checkbox"/> DOMESTIC CRUSHING <input type="checkbox"/> EXPORT CRUSHING (Fragmented) <input type="checkbox"/> OTHER (Specify):	
THIS SAMPLE IS DESIGNATED AS: <input type="checkbox"/> 1-AB <input checked="" type="checkbox"/> 2-AB <input type="checkbox"/> 3-AB <input type="checkbox"/> 1-CD <input type="checkbox"/> APPEAL <input type="checkbox"/> OTHER:					
RESULTS FROM PREVIOUS SAMPLES: 1-AB <input checked="" type="checkbox"/> (ppb) 2-AB <input checked="" type="checkbox"/> (ppb) 1-CD <input checked="" type="checkbox"/> (ppb)					
PRODUCT (Other than peanuts): <input type="checkbox"/> IN-SHELL BRAZIL NUTS <input type="checkbox"/> IN-SHELL PISTACHIO NUTS		WEIGHT OF LOT: <i>Wholes 153 Lot (29550)</i>		NUMBER OF SACKS: <i>345 ctms 591 ctms</i>	
<input type="checkbox"/> SHELLED PISTACHIO NUTS <input type="checkbox"/> OTHER: <i>Wholes</i>		SHIPPER'S MARK: <i>(A) SSC Lot Someplace Some Nut Co. Some, State shelled nutmeat 50 lbs. (SSC 1P072MV7, Item 461. (B) Same markings on container (labeled Diamond MS5 SSR25/27, 1538A071M V7, Item 461.</i>			
TYPE OF ANALYSIS: <input type="checkbox"/> KERNEL AND SHELL <input type="checkbox"/> KERNEL ONLY	APPROX. WT. OF SAMPLE: <i>Lot A = 17.1 lbs Lot B = 10 lbs</i>	SAMPLE SHIPPED VIA:	RESULTS OF ANALYSIS TO BE: <input checked="" type="checkbox"/> PHONED OR WIRED COLLECT <i>My Friend (123) 456-7899</i> <input type="checkbox"/> MAILED TO APPLICANT phone no.		
REMARKS: <i>SSC Lot: 345 ctms (Lot A) 1538A071M V7 Lot (Lot B) 591 ctms.</i>					
DATA BLOCK - FOR USDA USE ONLY		SAMPLE SENT TO (Name of Laboratory): <i>Some FFV Office</i>		DATE SENT: <i>3-14-97</i>	
CORRECTS: _____		ADDRESS: <i>Some, State</i>		INSPECTOR'S SIGNATURE: <i>J. M. Inspector</i>	
APPLICANT NO. <i>21</i>		ON-SITE HOURS: _____		TRAVEL MILES: _____	
O.T. (hrs): _____		O.T. (hrs): _____		FEE: _____	
INSPECTED BY: _____		MARKET OFFICE: <i>Anyplace, State.</i>		POSTAGE: _____	
OTHER: \$ _____				TRANS. CHARGES: _____	
				TOTAL: _____	

CARRIER IDENTIFICATION		LOADING		INSPECTION		U.S. DEPARTMENT OF AGRICULTURE	
LOTIA		UL		NOTESHEET		AGRICULTURAL MARKETING SERVICE	
PREFIX		NUMBER		STATE		FRUIT & VEGETABLE DIVISION	
Carrier No. Stated by:				CERTIFICATE NUMBER: EXAMPLE #1			
Additional Lot ID:				INSPECTION STARTED:			
Carrier Type / Name:				m m d d y y Hour Min. A/P			
				0 3 1 8 9 7 1 1 : 0 0 A M			
Refrigeration Unit:				Inspection Completed:			
<input type="checkbox"/> ON <input type="checkbox"/> OFF <input type="checkbox"/> OPEN <input type="checkbox"/>				m m d d y y Hour Min. A/P			
Condition of Carrier:				0 3 1 8 9 7 1 2 : 3 0 P M			
Inspection Site: OFFICE				APPLICANT:			
				Some Nut Co.			
				Address: Some, State			
				SHIPPER:			
				Address: SAME			
A: PRODUCT:		BRANDS / MARKS:					
SHELLED ALMONDS		"Some Nut Co., Some, State,					
NUMBER OF CONTAINERS:		INSP. COUNT:		50 lbs. net wt."			
345 CARTONS		N					
TEMPERATURES:							
B: PRODUCT:							
NUMBER OF CONTAINERS:		INSP. COUNT:					
TEMPERATURES:							
C: PRODUCT:							
NUMBER OF CONTAINERS:		INSP. COUNT:					
TEMPERATURES:							
D: PRODUCT:							
NUMBER OF CONTAINERS:		INSP. COUNT:					
TEMPERATURES:							
Condition of Load & Containers:							
() STACKED ON PALLET'S AT ABOVE LOCATION () INTACT THROUGH LOAD () PARTLY UNLOADED							

FORM FV-300-N (3-93)



A	B	C	D
PACK 	PACK 	PACK 	PACK

SCOT SHEET										
PLI Number	Other I.D.	TEMP.	Sample	PART	SHE	DBL	YS	SPL	Count	LG SM
NONE		2000	Q	20.4	74.7	132.4	23.4		218	25.0 16.5
		9.000		1.02	3.74	6.62	1.17		215	
									216	1.52
									649	FW
									240	
									27.04	

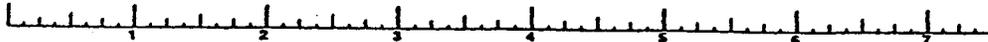
Clean + dry

REMARKS / RESTRICTIONS / SPI *Sample drawn on 3/14/97 at Some State see Cert. Z-1 for sampling.*

CARLOT Basis: _____ HOURLY Basis: _____ TRAVEL Time: _____ EXPENSES: _____ EST. TOTAL: _____	REPORTED TO: <i>FAXed</i> DATE: <i>3/18/97</i> TIME: <i>2:00 pm</i>	INSPECTED BY: <i>Jones Doe</i> ASSISTED BY: _____
	REQUESTED BY: <i>Frank</i> DATE: <i>3/17/98</i> TIME: <i>8:00 am</i>	

CARRIER'S IDENTIFICATION		LOADING	INSPECTION NOTESHEET	U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION	
LOT B		UL	CERTIFICATE NUMBER	EXAMPLE #2	
Carrier No. Stated by:			INSPECTION STARTED:	m m d d y y Hour Min. A/P	
Additional Lot ID.:			0,3 1,8 9,7	1,2:3,0 P M	
Carrier Type/Name:			Inspection Completed:	m m d d y y Hour Min. A/P	
Refrigeration Unit:	Doors:		0,3 1,8 9,7	0,2:0,0 P M	
<input type="checkbox"/> ON <input type="checkbox"/> OFF	<input type="checkbox"/> OPEN <input type="checkbox"/>		APPLICANT: Some Nut Co.		
Condition of Carrier:			Address: Some, State		
Inspection Site: OFFICE			SHIPPER: SAME		
A: PRODUCT: SHIELLED ALMONDS		BRANDS / MARKS:			
NUMBER of CONTAINERS: 591 cartons		"Some Nut Co., Some, State, 50 lbs. net wt."			
TEMPERATURES: N					
B: PRODUCT:					
NUMBER of CONTAINERS:					
TEMPERATURES:					
C: PRODUCT:					
NUMBER of CONTAINERS:					
TEMPERATURES:					
D: PRODUCT:					
NUMBER of CONTAINERS:					
TEMPERATURES:					
Condition of Load & Containers:					
() STACKED ON PALLETS AT ABOVE LOCATION		() INTACT THROUGH LOAD		() PARTLY UNLOADED	

FORM FV-300-N (3-93)



A B C D

PACK	PACK	PACK	PACK
SIZE	SIZE	SIZE	SIZE

SCORE SHEET										
PLI Number	Other I.D.	TEMP.	Sample	PART	C/S	SPL	SMTL	DBL	Count	LG SM
None			ROAD	D	345.6	26.0	16.8	54.3	199	24.6 21.0
			SI (Am)		17.28	1.30	0.84	2.72	199	1.17
									597	PK
									24	
									24.88	

Clean + dry

REMARKS / RESTRICTIONS / SPI Sample drawn on 3/14/97 at Some, State see Cert. 2-1 for sampling.

CARLOT Basis: <input checked="" type="checkbox"/>	REPORTED TO: forced	INSPECTED BY: Jonie Doe
HOURLY Basis: <input checked="" type="checkbox"/>	DATE: 3/18/98 TIME: 2:00pm	ASSISTED BY:
TRAVEL Time: <input checked="" type="checkbox"/>	REQUESTED BY: Frank	
EXPENSES: <input checked="" type="checkbox"/>	DATE: 3/17/97 TIME: 8:00 Am	
EST. TOTAL:		

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
INSPECTION CERTIFICATE
EXAMPLE #2

CLASSIFICATION: U.L.C.
 LOT: L.C.T. B
 Additional Lot ID:
 Carrier/Lot ID stated by:
 Carrier Type / Name:
 Refrigeration Unit: On Off Open Closed
 Lot: SHELLED ALMONDS
 Name of Applicant: Some Nut Co
 Address: Some, State
 Shipper: SAME
 Address:
 Insp. Site: Some Office
 Date of Inspection: 0.3.18.97
 Name of Inspector: 12.30 P
 Net Weight: 591 cwt
 Net Weight in Pounds: 591 cwt
 Net Weight in Kilograms: 591 cwt

PREPARED BY: [Signature]
 CHECKED BY: [Signature]
 RECEIVED BY: [Signature]

GRADE: U.S. Select Sheller Run, 2/3/25

REMARKS: Sample drawn on 3/14/97 at Some, State see cert. E-1 for sampling.

WARNING: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both.

ESTIMATED TOTAL: \$ 15

GRADES	PERCENT
GRAMS	PERCENT
54.3	2.72
345.6	17.28
26.0	1.30
16.8	0.84
0	0
0	0

Size: Average 24.88 kernel per ounce. Kernel fairly uniform.
 Almonds all clean and dry. At approximately 400 gram sample drawn, 2000 gram analyzed rather the following: