

Specifications for Cashew Kernels

AFI Nut & Agricultural Products Section

General Requirements

- A. Each shipment to the US, inspected or released by FDA and cleared by customs, shall be of good quality and be stored in accordance with good commercial practice.
- B. The cashews shall be packed in new, clean, dry, leakproof, lead-free containers with an airtight (hermetic) seal and without internal paper liners. Packaging shall be of sufficient strength to assure the integrity of the product during normal shipment and storage.

The outer container shall be constructed of a new cardboard, free of infestation and visual mold, and sealed without staples, unless otherwise specified by the end user.
- C. Only pesticides approved for use on cashews may be used, and residues must be within the tolerances set by the government of the importing country. No detectable residue is permitted for any pesticide that is not approved for use on cashews in the importing country.
- D. All cartons shall be clearly marked on each end with the following:
 1. Name of the product and trade name or brand name, if any.
 2. Name and address of producer or packer.
 3. Grade.
 4. Net weight.
 5. Country of Origin.
 6. Buyer's name or marks.
 7. Destination.
 8. Other marks agreed to by buyer and seller.
- E. Bill of Lading must list the number of cartons, source of origin, and the marks that are on the cartons.
- F. Excessive breakage is avoided by the control of moisture, and proper storage - packing - handling - and transportation. Fluctuations in temperature and humidity should be avoided also to protect the integrity of the product. At time of pack, breakage should not exceed 5% so that at time of delivery it does not exceed 10%.
- G. All shipments should be inspected prior to loading and shall be carried on conveyances suitable for transporting food products in good condition, i.e. free of odors, insect or mold damage, rodent activity, and all other foreign materials.
- H. The moisture level of the cashews should be 3%-5%.
- I. If a roast test is required in a contract, it should be conducted in accordance with Appendix II.

Quality and Grading

Cashew kernels are classified as: First Quality Fancy; Second Quality Scorched/Color Variation; Third Quality Special Scorched/Color Variation; Fourth Quality; and Dessert.

FIRST QUALITY FANCY cashew kernels have a uniform color which may be white, light yellow, pale ivory or light ash-grey.

SECOND QUALITY SCORCHED/COLOR VARIATION cashew kernels may be yellow, light brown, light ivory, light ash-grey or deep ivory.

THIRD QUALITY SPECIAL SCORCHED/COLOR VARIATION cashew kernels may be deep yellow, brown, amber, and light to deep blue. They may be slightly shrivelled, immature, speckled, blemished or otherwise discolored.

FOURTH QUALITY cashew kernels would qualify as First or Second Quality, except that they have pitted spots.

DESSERT cashew kernels may be scraped, shriveled, blemished or otherwise discolored.

Sizing

Sizing is compulsory in first quality/fancy cashew kernels but is optional for other whole grades.

The quantity of broken kernels or pieces in "whole" kernels shall not exceed 10% by weight.

The quantity of pieces present in "butts" and "splits" shall not exceed 10% by weight.

The quantity of the next lower size grade in "pieces" shall not exceed 5% by weight.

Size Designation	Count per	
	Kilo	Pound
180 (or SLW)	266-395	120-180
210 (or LW)	395-465	180-210
240	485-530	220-240
320	660-706	300-320
450	880-990	400-450

Whole (W)¹

A cashew kernel is classified as whole if it has the characteristic shape of a cashew kernel and not more than 1/8th of the kernel has been broken off. This grade may also be designated as "W".

Butts (B)

Kernels which have been broken crosswise, are less than 7/8 but not less than 3/8 of a whole kernel, and the cotyledons are still naturally attached. This grade may also be designated as "B".

Splits (S)

One half of a cashew kernel that has been split lengthwise, provided not more than 1/8 of this cotyledon has been broken off. This grade may also be designated as "S".

Pieces – See Table 3

Definitions

SERIOUS DAMAGE includes but is not limited to insect, rodent, or bird damage, visible mold - rancidity - decay, or adhering dirt - solder - shell - or mesocarp.

ADHERING MATTER - cashew meal or extraneous matter on the surface of the kernel causing permanent discoloration.

INSECT DAMAGE - is visible damage to the kernel from live or dead insects, mites in any stage of development, insect excreta or fragments - frass - webbing - boring - powdery residue - cast larval casings, and/or the evidence of insects or insect activity in the container.

RODENT DAMAGE - evidence of rodent activity.

BIRD DAMAGE - pieces of feather, bird excreta.

VISIBLE MOLD - mold filaments detectable with the naked eye.

RANCIDITY - is a breakdown of the oils in the kernel giving it an off-flavor or odor.

FOREIGN MATTER - includes but is not limited to shell, mesocarp, stones, dirt, glass, metal, solder, straw, twigs, sticks, plastic, hair, industrial fibers, paper and threads.

DEFECTS include superficial and intrinsic damage which adversely affects the appearance of the lot such as scorching, blemishes, discoloration, immature or shrivelled kernels, kernels with pitted black or brown spots, adhering testa, scrapes, flux marks, and speckles. Defects vary by grade. The presence of kernels of a lower grade are scored as defects.

SCORCHING - a discoloration due to over heating during shelling or blanching.

BLEMISHES OR DISCOLORATION - spots in aggregate in excess of 3 mm on the kernels from causes other than shelling or blanching.

IMMATURE - kernels are underdeveloped and do not have the characteristic shape of a cashew kernel.

SLIGHTLY SHRIVELED - a slight withering of the outer surface of the kernel.

SHRIVELLED - a complete withering of the kernel that distorts its characteristic shape.

PITTED SPOTS - black, brown, or other colored spots in aggregate in excess of 1 mm caused by pre-harvest attack on the kernel.

ADHERING TESTA - skin on the surface of the kernel measuring greater than 2 mm in diameter in aggregate.

SUPERFICIAL DAMAGE - deep knife cuts on the surface of the kernel that change the characteristic shape of the nut.

FLUX MARKS - black or brown marks on the surface of the kernels caused by flux dripping onto them when a tin container is sealed.

SPECKLED - a brown stain which appears after removal of the testa on some kernels.

¹An excessive number 7/8th kernels or splits that detract from the appearance of the sampled lot may be the basis for claim.

APPENDIX I

Lot Size Cartons	Inspection Level	
	Routine	Intensive
≤ 50	3	7
51 - 100	6	10
101 - 200	6	14
201 - 350	6	18
351 - 400	13	20
401 - 500	13	22
501 - 700	13	26

The value of a sampling plan is to encourage uniformity in the number of samples to be collected for examination to determine compliance with product specification.

Samples weighing approximately 500 grams each shall be chosen at random from the lot. The sub samples may be composited into a 1000 gram sample for analysis. However, they should be analyzed separately in the case of a claim.

The routine sampling plan is used for initial inspection of lots upon arrival, and for claims other than those for insect damage or infestation.

The intensive sampling plan may also be used for initial inspection of lots upon arrival, but is recommended for use when claims are made relative to insect damage or infestation.

Analysis of subsamples must be conducted under full spectrum lighting with a Color Rendering Index (CRI) of not less than CRI 91.

APPENDIX II

Test for Roasted Kernels

Almost all cashew kernels are sold to the consumer in the US after roasting. The appearance of the roasted kernel is critical for consumer acceptance. An uneven roast is never appealing to the consumer.

It is therefore recommended that shippers roast cashew samples prior to packing to determine the appearance that a lot will have after roasting. This is simply good manufacturing practices.

The roast test also confirms the proper classification of a lot, as to whether it should be sold as first, second, or third quality.

Roasting Procedure: The kernels should be roasted in a clear vegetable oil, e.g. peanut oil, which should be replaced as soon as it starts to deteriorate (when free fatty acids exceed 1%). The oil is brought to a temperature of 300^o - 310^oF (152^oC) and is kept on the heat source while cashews are immersed in the hot oil for a period of 3 minutes. Any lowering of the temperature of the oil by the immersion of the cashews will not require any lengthening of the 3-minute roasting period. Adjustments in temperature are recommended when roasting butts, splits, and small kernels.

Defects:

Spotted - brown spots that appear on the surface of the kernel after roasting, but which are not visible in the raw.

Scorched tip - a tip that is significantly darker than the remainder of the kernel due to a scorching during shelling or blanching.

Color Variation - any discoloration, other than a scorch mark, which detracts from the uniform appearance of the kernel.

Dark roast - a light to medium brown color in some kernels that detracts from the uniform appearance of kernels that are significantly lighter.

Deep roast - a deep brown color in some kernels that detracts from the uniform appearance of kernels that are significantly lighter.

Scrapes - knife scratches greater than 5mm in diameter that show up as light spots on the surface of the kernel.

Uneven roast - a roast with more than 7% total of the following defects: spotted, scorched tips/color variations, deeply scorched tips, dark roast, and deep roast.

Maximum Tolerances for Defects in First and Second Quality Roasted Cashew Kernels

	First Quality ¹	Second Quality ²
Spotted	1.0%	2.5%
Scorched Tips/Color Variations	2.0%	No Limit
Deeply Scorched Tips	1.0%	2.5%
Dark Roast	5.0%	No Limit
Deep Roast	2.0%	10.0%
Scrapes	5.0%	No Limit

¹The Total Defect Level for First Quality cannot exceed 7% for defects other than scrapes.

²On Second Quality there are only limits for spotted, deeply scorched tips, and deep roast. No total defect level is necessary for second quality.