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**REVISION OF UNECE STANDARDS**

**INSHELL ALMONDS**

Transmitted by Spain

**Note by the secretariat :** The Rapporteur (Spain) has prepared a revised proposal for the Standard for Inshell Almonds based on comments received from delegations.

**REVISED UNECE STANDARD**  
concerning the marketing and commercial quality control of

**INSHELL ALMONDS**

moving in international trade between and to  
UN/ECE member countries

**I. DEFINITION OF PRODUCE**

This standard applies to sweet inshell almonds of varieties (cultivars) grown from *Prunus amygdalus* Batsch, syn. *Prunus dulcis* (Mill.) D.A. Webb from which the fleshy husk (*husk or hull?*) (epicarp and mesocarp) has been removed, intended for direct consumption. It does not apply to inshell almonds intended **to be cracked or** for ~~industrial~~ **further industrial** processing, or for use in the food industry.

Inshell almonds are classified into three commercial types as defined below, according to the hardness of the shell: <sup>1</sup>

- Soft type: inshell almonds which can be **easily** cracked with the fingers.
- Semi-soft type: inshell almonds which need a nutcracker to be cracked.
- Hard type: inshell almonds which can be cracked only with a hammer or similar devices.

**II. PROVISIONS CONCERNING QUALITY**

The purpose of the standard is to define the quality requirements of sweet inshell almonds at the export control stage, after preparation and packaging.

**A. Minimum requirements**

- (i) In all classes, subject to the special provisions for each class and the tolerances allowed, inshell almonds must be:
  - (a) Characteristics of the shell :
    - intact; slight cracks and superficial damage are not considered as a defect;<sup>2</sup>

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<sup>1</sup> Other denominations commonly used in international trade are accepted, as are “Paper type” or “Mollares” for the Soft type, and “Fitas” or “Semi-mollares” for the Semi-soft type.

<sup>2</sup> Small outer parts of the shell may be missing, provided that the kernel is protected.

- sound; **free from defects likely to affect the natural keeping quality of the fruit;** ~~produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;~~
- clean, practically free of adhering dirt and any other visible foreign matter;
- dry; free of abnormal external moisture;
- free from residue of ~~the~~ husk;
- free of damage caused by pests;
- free from gum;
- free from blemishes or discoloration rendering them unfit for consumption;<sup>3</sup>
- well formed; the shell is not noticeably misshapen;
- free of foreign smell.

(b) Characteristics of the kernel:

- sufficiently dry to ensure keeping quality; ~~(see moisture content)~~
- intact;
- sound; kernels affected by rotting or deterioration rendering them unfit for consumption are excluded;
- clean, **practically free of any visible foreign matter;**
- sufficiently developed; empty shells and shrunken or shrivelled kernels are to be excluded;<sup>4</sup>
- free from ~~living or dead~~ insects or mites **(living pests)** whatever their stage of development;
- free of damage caused by pests;
- free from gum and brown spot;
- free from mould;
- free from rancidity;
- free from blemishes and discoloration rendering them unfit for consumption;
- sweet; bitter almonds are excluded;
- free of foreign smell and/or taste.

Inshell almonds must be harvested when fully ripe.

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<sup>3</sup> *The almond shells may be brushed and bleached, provided that the treatment applied does not affect the quality of the kernel and is permitted by the regulations of the importing country.*

<sup>4</sup> *Twin or double kernels are not considered as a defect.*

The condition of the inshell almonds must be such as to enable them:

- to withstand transport and handling, and
- to arrive in satisfactory condition at the place of destination.

(ii) Moisture content

~~The kernel of the~~ Inshell almonds shall have a moisture content not greater than ~~9 per cent~~ **10.0 per cent for the whole nut, and 7.0 percent for the almond kernel**.<sup>5</sup>

## B. Classification

Inshell almonds are classified in three classes defined below:

(i) *“Extra Class”*

**Almond kernels in this class must be of superior quality. They must be characteristic of the variety or of the group of varieties of similar characteristics<sup>6</sup> indicated on the marking,<sup>7</sup> and belong to either the soft or semi-soft commercial type.**

**They must be free from defects with the exception of very slight superficial defects provided these do not affect the general appearance of the produce, the quality, keeping quality and presentation in the package.**

(ii) *Class I*

Inshell almonds in this class must be of good quality. They must be of similar ~~varieta~~ characteristics<sup>6</sup> ~~and, when appropriate, of the variety or group of varieties indicated on the marking,~~ and belong to either the soft or semi-soft commercial type.

Slight superficial defects of the shell and slight defects in shape or development may be allowed provided these do not affect the general appearance of the produce, the quality, keeping quality and presentation in the package.

(iii) *Class II*

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<sup>5</sup> The moisture content is determined by one of the methods given in Annex I of this document. The laboratory reference method shall be used in cases of dispute. **Moisture content of the almond kernel prevails over the whole nut moisture content, in cases of dispute.**

<sup>6</sup> Similar ~~varieta~~ characteristics means that the ~~kernels~~ **almonds** in each lot are similar in shape **and external appearance** and reasonably uniform in degree of hardness of the shell.

<sup>7</sup> The reference to a variety or group of varieties **is mandatory in “Extra Class” and optional both in Class I and Class II.**

This class includes inshell almonds which do not qualify for inclusion in **the higher classes Class I** but satisfy the minimum requirements specified **[in part A]** above. They can belong to **either** the soft, semi-soft or hard commercial type. ~~but not to mixed commercial types.~~ **Mixtures of commercial types are not allowed.**

Superficial defects of the shell and defects in shape or development may be allowed, provided the inshell almonds retain their essential characteristics as regards the quality, keeping quality and presentation.

### III. PROVISIONS CONCERNING SIZING

~~Sizing is optional for inshell almonds in both Class I and Class II, which can be either sized or screened.~~

**Inshell almonds are either sized or screened.** Sizing and screening are determined by the maximum diameter of the equatorial section of the shell, by means of round-holed screens. In addition to this system, other optional sizing and screening systems can be used, such as those based in the number of inshell almonds per 100 g or per ounce, provided that the equivalent size or screen in mm would be expressed in the marking. *(former footnote 8 transferred here)*

**Sizing or screening is compulsory for Extra Class, but optional for Class I and Class II.**

*[For Extra Class, the minimum size allowed is ? mm].*

- (i) Sizing is expressed by an interval defined by a maximum and minimum size in millimetres, **which must not exceed 2 mm of difference.** All sizes are allowed.
- (ii) Screening is expressed by a reference to a minimum size in millimetres, followed by the words “and above” or “and plus”, or by a reference to a maximum size in millimetres, preceded or followed by the words “under” or “and less”. For produce presented to the final consumer under the specification screened, the reference “under” or “and less” is not allowed.

### IV. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality and size are allowed in each package for produce not satisfying the requirements of the class indicated.

## A. Quality tolerances

Defects allowed <sup>8</sup>	Tolerances allowed (per cent of defective fruit by count) <sup>a</sup>		
	Extra	Class I	Class II
(a) Total tolerances for <b><u>shells not satisfying the minimum requirements, of which no more than:</u></b> defects of the shell, of which:	<b><u>5</u></b>	10	15
- almonds <b><u>shells</u></b> with adhering husk <b><u>and/or affected by blemishes or discolouration, damaged by pests, rotting or deterioration</u></b>	<b><u>1</u></b>	3	5
(b) Total tolerances for <b><u>kernels not satisfying the minimum requirements, of which no more than:</u></b> defects of the kernel, of which	<b><u>8</u></b>	10	15
- bitter almonds and kernels having bad smell or taste	<b><u>1</u></b>	3	4
- shrunken or shrivelled, <del>and</del> not sufficiently developed kernels <b><u>and empty nuts</u></b>	<b><u>5</u></b>	7	10
- rancid, rotten, mouldy and damaged by insects or other pests <sup>b c</sup>	<b><u>2</u></b>	5	7
(c) <b><u>Other defects (not included in total tolerances):</u></b>			
- <del>Empty</del> _____ nuts		<del>— 5</del>	<del>— 8</del>
- loose shells and shell fragments <b><u>(by weight) <sup>a</sup></u></b>	<b><u>1</u></b>	<del>+</del> <b><u>2</u></b>	3
- dust and foreign matter <b><u>(by weight) <sup>a</sup></u></b>	<b><u>0.25</u></b>	0.25	0.25

<sup>a</sup> All tolerances are calculated by count, except those for loose shells and shell fragments, and dust and foreign matter, which are calculated by weight with regard to the total inshell weight basis.

<sup>b</sup> Living pests are inadmissible in any class.

<sup>c</sup> Kernels affected by gum or brown spot are subject to the total tolerance for kernels.

There may be a maximum of 5 per cent, by count, in **Extra Class and Class I**, and 10 per cent in Class II, of inshell almonds belonging to different commercial types<sup>8</sup>, from the same local production area.

<sup>8</sup> Standard definitions of the defects are listed in Annex II.

When a variety or a group of varieties is indicated in the marking, there is a maximum tolerance of 10 per cent, by count, for **Extra Class and** Class I, and 20 per cent for Class II, of inshell almonds belonging to different varieties.

**B. Mineral impurities**

Ashes insoluble in acid must not exceed 1g/kg.

**C. Size tolerances**

**For all classes,** when applicable, a maximum tolerance of ~~20~~ **15** per cent, by count, of inshell almonds not conforming to the size or screen indicated on the marking is allowed.

**V. PROVISIONS CONCERNING PRESENTATION**

**A. Uniformity**

The contents of each package must be uniform and contain only sweet inshell almonds of the same origin, crop year, quality and commercial type, and, when applicable, variety or group of varieties and size.

The visible part of the contents of the package must be representative of the entire contents.

**B. Packaging**

Inshell almonds must be packed in such a way as to protect the produce properly.

The materials used inside the package must be new, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed provided that the printing or labelling has been done with non-toxic ink or glue.

Packages must be free of all foreign matter.

**C. Presentation**

Inshell almonds must be presented in bags or solid containers. All pre-packages **[consumer packages]** within each package must be of the same weight.

## VI. PROVISIONS CONCERNING MARKING

Each package <sup>9</sup> must bear the following particulars in letters grouped on the same side, legibly and indelibly marked and visible from the outside:

### A. Identification

Packer	)	Name and address or
and/or	)	officially issued or
Dispatcher	)	accepted code mark <sup>10</sup>

### B. Nature of produce

- "Inshell almonds" or "Almonds in the shell"
- Commercial type
- Variety or group of varieties (optional **in Class I and Class II**)

### C. Origin of produce

- Country of origin and, optionally, district where grown or national, regional or local place name

### D. Commercial specifications

- Class;
- Size or screen expressed in millimetres <sup>11</sup> (optional **in Class I and Class II**);
- Net weight, or the number of pre-packages, followed by the net unit weight in the case of packages containing such units (optional or at the request of the importing country).
- Crop year (optional); **mandatory according to the legislation of the importing country.**
- "Best before" followed by the date (optional)

### E. Official control mark (optional)

<sup>9</sup> *Package units of produce prepacked for direct sale to the consumer shall not be subject to these marking provisions but shall conform to national requirements **of the importing country.** However the markings referred to shall in any event be shown on the transport packaging containing such package units.*

<sup>10</sup> *The national legislation of a number of European countries requires the explicit declaration of the name and address. In the case where a code mark is used, the reference "packer and/or dispatcher" (or equivalent abbreviations) has to be indicated in close connection with the code mark.*

<sup>11</sup> **Or count per 100 g or per ounce, provided that the equivalent size or screen in mm would be expressed.**



## ANNEX II

## DEFINITIONS OF TERMS AND DEFECTS FOR INSHELL ALMONDS

Bitter almond:	almond kernel with a characteristic bitter taste produced by <u>amygdalin</u> , <del>hydrocyanic acid (HCN)</del> , a natural compound of bitter almond varieties.
Double or twin:	almond kernel of characteristic shape, with one side flat or concave, as a consequence of the development of two kernels in the same shell.
Clean:	practically free from plainly visible adhering dirt or other foreign material.
Well formed:	the shell is not noticeably misshapen and, when appropriate, its shape concords with the <u>varietal</u> characteristic <del>s. varietal or commercial type</del> .
Empty <u>nut</u> <del>shell</del> :	almond shell containing no kernel (aborted kernel).
Sufficiently developed:	almond kernel of normal shape, without aborted or dried out portions; shrunken and shrivelled kernels are not sufficiently developed.
Shrunken or shrivelled:	almond kernel which is extremely flat and wrinkled, or with desiccated, dried out or tough portions, when the affected portion represents more than one <del>eighth</del> <u>quarter</u> of the kernel.
Adhering husk: (husk or hull?)	residues of husk adhered on the surface of the shell, affecting in aggregate more than 5 per cent of the shell surface; the presence of lesser portions of husk are not considered as a defect.
Mould:	mould filaments visible to the naked eye, either on the shell or on the kernel.
Rancidity:	oxidation of lipids or free fatty acid production giving a characteristic disagreeable flavour.
Rotten:	significant decomposition or decay caused by the action of micro-organisms or other biological processes, normally accompanied by changes in texture and/or colour.
Insect or pest damage:	visible damage or contamination caused by insects, mites, rodents or other animal pests, including the presence of dead insects, insect debris or excreta.
Living pests:	presence of living pests (insects, mites or others) at any stage of development (adult, nymph, larva, egg, etc.).

Gummy:	resinous appearing substance on the surface of the shell or on the kernel, covering in aggregate an area more than the equivalent of a circle of <del>10</del> <b>6</b> mm <del>of</del> <b>in</b> diameter.
Brown spot:	<b><u>slightly depressed</u></b> brown <del>or dark</del> spots on the almond kernel, either single or multiple, <b><u>caused by the sting of insects, [as the box elder bug (<i>Leptocoris trivittatus</i> Say)]</u></b> affecting or not the endosperm, <b><u>and</u></b> covering in aggregate an area more than the equivalent of a circle of <del>6</del> <b>3</b> mm <del>of</del> <b>in</b> diameter.
Blemish and discoloration (shells):	apparent and spread <del>very</del> <b><u>stains or grey,</u></b> dark or black discoloration <b><u>contrasting with the natural colour of the shell,</u></b> affecting in aggregate more than one <b><u>quarter</u></b> <del>half</del> of the surface of the shell; colour variations between shells are not considered as a defect.
Blemish and discoloration (kernels):	apparent and spread <b><u>stains, other than gum and brown spot, or severe dark or black discoloration contrasting with the natural colour of the kernel skin,</u></b> <del>discoloration other than gum and brown spot, including dark or black colour,</del> affecting in aggregate more than one quarter of the surface of the almond kernel; colour variations between kernels are not considered as a defect.
Abnormal external moisture:	presence of water, moisture or condensation directly on the surface of the product.
Foreign smell and/or taste:	any odour or taste that is not characteristic of the product.
Loose shells and shell fragments:	shell halves or split empty shells, and fragments of almond shell or almond husk.
Foreign matter:	any visible and/or apparent matter or material, including dust, not usually associated with the product, except mineral impurities.