

**NOTE BY THE SECRETARIAT:** This text is based on document TRADE/WP.7/GE.1/2003/15/Add.4. It includes the changes adopted at the 59<sup>th</sup> session of the Working Party.

**UNECE STANDARD DDF-10**  
concerning the marketing and commercial quality control of

**PISTACHIO KERNELS AND PEELED PISTACHIO KERNELS**

**I. DEFINITION OF PRODUCE**

This standard applies to pistachio kernels and peeled pistachio kernels from varieties (cultivars) grown from pistachio (*Pistacia vera* L.) of which the protective pericarp has been removed. Peeled pistachio kernels are kernels from which the pellicle has been removed completely. Pistachio kernels and peeled pistachio kernels, which are processed by salting, sugaring, flavouring or roasting, are excluded.

**Colour Classification**

Peeled pistachio kernels are classified into four colour types defined below. Colour classification for pistachio kernels is optional. :

- (i) **Green**  
The inside longitudinal section must be green or dark green in colour. Not more than 25 per cent of kernels, by count, may display light green and/or yellow sections.
- (ii) **Gulic (Light Green)**  
The inside longitudinal section must be light green in colour. Not more than 40 per cent of kernels, by count, may display yellow sections.
- (iii) **Yellow**  
The inside longitudinal section of the kernel must display a predominantly yellow colour. Not more than 25 per cent of kernels, by count, may display green and/or light green colour.
- (iv) **Mixed Colour**  
Lots not included in one of the above categories fall into this category which otherwise are subjects to all quality requirements of Section II. B.

**II. PROVISIONS CONCERNING QUALITY**

The purpose of the standard is to define the quality requirements of pistachio kernels and peeled pistachio kernels 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, the pistachio kernels and peeled pistachio kernels must be:
- intact; the absence of a small part of the outer skin and endosperm shall not be considered as a defect,
  - sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded,
  - sufficiently developed; shrunken and shrivelled kernels are to be excluded,
  - clean, practically free from any visible foreign matter,
  - free from insects or mites whatever their stage of development;
  - free of damage caused by pests,
  - free from mould,
  - free from rancidity
  - free of abnormal external moisture
  - free of foreign smell and/or taste
  - sufficiently dry to ensure keeping quality,

The condition of pistachio kernels and peeled pistachio kernels 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

Pistachio kernels and peeled pistachio kernels shall have moisture content not exceeding 6.5 per cent.<sup>1 2</sup>

## B. Quality Classification

Pistachio kernels are classified into three quality classes as defined below:

### (i) “Extra” class

Pistachio kernels in this class must be of superior quality. They must be characteristic of the variety and/or commercial type.

They must be well developed, of normal shape and the inside longitudinal section must be according to colour type when specified.

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

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<sup>1</sup> *The moisture content is determined by one of the methods given in Annex II of the Standard Layout – Determination of Moisture content for dry produce (nuts) ([http://www.unece.org/trade/agr/info/layout/laydry\\_e.pdf](http://www.unece.org/trade/agr/info/layout/laydry_e.pdf)). The laboratory reference method shall be used in cases of dispute.*

<sup>2</sup> *Reservation by the Netherlands, which is in favour of a maximum moisture content of 6.0 per cent.*

- (ii) **Class “I”**  
Pistachio kernels in this class must be of good quality. They must be characteristic of the variety and/or commercial type.

They must be fairly well developed and normal in shape and the inside longitudinal section must be according to colour type when specified.

Slight defects may be allowed provided that these do not affect the general appearance of the produce, the quality, the keeping quality or its presentation in the package.

- (iii) **Class “II”**  
This class includes pistachio kernels, that do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified above. Defects are allowed, provided the pistachio kernels retain their essential characteristics as regards, quality, keeping quality and presentation.

Peeled pistachio kernels are classified into two classes:

- (i) **Extra class**  
Peeled pistachio kernels must be of superior quality. They must be characteristic of the variety and/or commercial type.

They must be well developed, of normal shape and the inside longitudinal section must be of the colour specified.

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

- (ii) **Class “I”**  
Peeled pistachio kernels in this class must be of good quality. They must be characteristic of the variety and/or commercial type.

They must be fairly well developed, of normal shape and the inside longitudinal section must be of the colour specified.

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

### III. PROVISIONS CONCERNING SIZING

Sizing for pistachio kernels and peeled pistachio kernels is optional.

#### IV. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality shall be allowed in each package for produce not satisfying the requirements of the class indicated.

##### A. Quality Tolerances

| Defects <sup>3</sup>                               | Tolerances allowed<br>(Per cent of defective fruit by weight) |         |          |                          |                      |
|--|---|---------|----------|--------------------------|----------------------|
|  | Pistachio kernels   |         |          | Peeled pistachio kernels |                      |
|  | “Extra”   | Class I | Class II | “Extra” <sup>a</sup>     | Class I <sup>a</sup> |
| Total tolerances                                   | 5   | 6       | 8        | 5                        | 10                   |
| Insufficiently developed                           | 1.5   | 1.5     | 2.0      | -                        | -                    |
| Shrivelled   | 3   | 4       | 5        | 4 <sup>b</sup>           | 6 <sup>b</sup>       |
| Foreign matter                                     | 0.1   | 0.1     | 0.2      | -                        | -                    |
| Damaged by insects                                 | 1.5   | 2.0     | 2.5      | 1                        | 1.5                  |
| Visible mould <sup>4</sup>                         | 0.5 <sup>5</sup>  | 0.5     | 1.0      | 0.5 <sup>b</sup>         | 0.5                  |
| Other defects not included in the total tolerances |   |         |          |                          |                      |
| Halves (split) and broken                          | 15  | 20      | 25       | 15                       | 20                   |
| Of which broken not more than                      | 10  | 10      | 15       | 5                        | 5                    |

<sup>a</sup> The tolerance for other colours than the colour specified according to the definition of produce is 5 per cent for Extra Class and 20 per cent for Class I.

<sup>b</sup> Include within this tolerance, not more than 3 per cent of dark shrivelled kernel.

##### B. Mineral impurities

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

#### V. PROVISIONS CONCERNING PRESENTATION

##### A. Uniformity

The contents of each package must be uniform and contain only pistachio kernels and peeled pistachio kernels of the same origin, crop year, quality and colour type (if specified) and sized (if sized). The visible part of the contents of the package must be representative of the entire contents.

<sup>3</sup> Standard definitions of the defects are listed in the Annex of this document

<sup>4</sup> Poland considers that the tolerance for visible mould should be 0.5 Per cent in all classes.

<sup>5</sup> Reservation of the Netherlands and the United Kingdom, who are in favour of zero tolerance for mould in EXTRA class produce.

**B. Packaging**

The pistachio kernels and peeled pistachio kernels must be packed in such a way so as to protect the produce properly. For green pistachios, special materials (light sensitivity bags) may be used for the protection of the colour of the kernels.

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 a non-toxic ink or glue.

Packages must be free of all foreign matter.

**C. Presentation**

The pistachio kernels and peeled pistachio kernels must be presented in bags or solid containers. When using textile or mesh bags, special attention should be paid to protect the produce against external moisture and contamination, by the use of external packages, internal paper or plastic film bags.

All consumer packages within each package must be of the same weight.

**VI. PROVISIONS CONCERNING MARKING**

Each package<sup>6</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>7</sup> |

**B. Nature of the produce**

- "Pistachio Kernels" or "Peeled Pistachio Kernels".

**C. Origin of the produce**

- Country of origin and, optionally, district where produced or the national, regional or local place name.

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<sup>6</sup> *Package units of produce pre-packed for direct sale to the consumer shall not be subject to these marking provisions but shall conform to national requirements. However the markings referred to shall in any event be shown on the transport packaging containing such package units.*

<sup>7</sup> *The national legislation of a number of European countries requires the explicit declaration of the name and address.*

**D. Commercial specifications**

- Quality class;
- Colour type (optional for pistachio kernels);
- Size class (optional);
- Crop year, (optional); mandatory according to the legislation of the importing country
- “Best before” followed by the date (Optional);
- Net weight, or the number of consumer packages followed by the net unit weight in the case of packages containing such units (optional or at the request of the importing country).

**E. Official control mark (Optional)**

First published 1990 (as UNECE Standard for Decorticated and Decorticated Peeled Pistachio Nuts)  
Revised 2003 and published as a Recommendation for a one-year trial period

**ANNEX: DEFINITIONS OF TERMS AND DEFECTS FOR  
PISTACHIO KERNELS AND PEELED PISTACHIO KERNELS**

Based on Annex III of the Standard Layout

|                               |  |
|-------------------------------|--|
| <b>Fully developed</b>        | The condition of pistachio in which the kernel has developed fully.  |
| <b>Halved/split</b>           | Kernels separated longitudinally as two individual cotyledons.   |
| <b>Broken</b>                 | More than 1/3 of kernel is missing.  |
| <b>Shrivelled</b>             | Kernel which is seriously shrunken, wrinkled and tough.  |
| <b>Rancid</b>                 | Oxidation of lipids producing a disagreeable flavour. An oily appearance of the flesh does not necessarily indicate a rancid condition |
| <b>Foreign smell or taste</b> | Any odour or flavour that is not characteristic of the product.  |
| <b>Insect damage</b>          | Visible damage by insects or animal parasites, or the presence of dead insects or insect debris.                                       |
| <b>Mould</b>                  | Mould filaments visible to the naked eye.  |
| <b>Decay</b>                  | Significant decomposition caused by the action of micro-organisms.   |
| <b>Clean</b>                  | Practically free from plainly visible adhering dirt or other extraneous matter.  |
| <b>Foreign matter</b>         | Any matter or material not usually associated with the product.  |