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Specialized Section on Standardization of
Dry and Dried Produce (Fruit)
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REPORT OF THE FIFTIETH SESSION

Addendum 5

UNECE RECOMMENDATION FOR INSHELL PISTACHIO NUTS

Note by the Secretariat: The Specialized Section agreed the text at its 50th session and recommends to the Working Party to adopt it as a UNECE Recommendation for Inshell Pistachio Nuts for a one-year trial period.

UNECE STANDARD DF-09
concerning the marketing and commercial
quality control of

INSHELL PISTACHIO NUTS
Moving in international trade between and to
UN/ECE member countries

I. DEFINITION OF PRODUCE

This standard applies to inshell pistachio nuts of varieties (cultivars) grown from Pistachio (*Pistacia vera* L.), from which the protective hull (epicarp and mesocarp) has been removed. Inshell pistachio nuts, which are processed by salting, sugaring or roasting, are excluded.

II. PROVISIONS CONCERNING QUALITY

The purpose of the standard is to define the quality requirements of inshell pistachio nuts 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 inshell pistachio nuts must be :

(a) Characteristics of the shell

- intact; slight superficial damage is not considered as a defect,
- sound, free from defects likely to affect the natural keeping quality of the nut,
- clean, practically free of any visible foreign matter,
- dry; free from abnormal external moisture
- free of residues of hull (epicarp and mesocarp),
- free of damage caused by pests,
- split either naturally or mechanically.

(b) Characteristics of the kernel

- sufficiently dry to ensure keeping quality
- intact, slight superficial damage is not considered as a defect,
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption, is excluded,
- clean, practically free of any visible foreign matter,

- sufficiently developed,
- 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.

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

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

(i) **Moisture content**

The kernel of inshell pistachio nuts has moisture content of not greater than 6.5 per cent.^{1 2}

B. Classification

Inshell pistachio nuts are classified in three classes defined below:

(i) ***“Extra” class***

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

Pistachio nuts in this class must be of good quality. They must be characteristic of the variety and/or commercial type. 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 inshell pistachio nuts, which do not qualify for inclusion in the higher classes but which satisfy the minimum requirements specified above. Defects may be allowed provided that the inshell pistachio nuts retain their essential characteristics as regards general appearance, quality, keeping quality and presentation.

III. PROVISIONS CONCERNING SIZING

Inshell pistachio nuts are sized or screened. Sizing or screening is compulsory for “Extra Class”, and “Class I” and optional for Class II.

¹ Reservation by the Netherlands and the United Kingdom for a maximum level of 6.0 per cent moisture.

² 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). The laboratory reference method shall be used in cases of dispute.

Sizing is determined by the number of inshell pistachio nuts per ounce or per 100 grams according to the following table:

Number of pistachio nuts per ounce	Number of pistachio nut per 100 grams
Less than 20	Less than 71
20-24	71-85
24-28	85-99
28-32	99-113
More than 32	More than 113

Broken nuts and blanks or empty nuts shall not be used in determining counts.

When sized, inshell pistachio nuts shall be fairly uniform size. It means that, in a representative sample, the weight of 10 per cent, by count, of the largest pistachio nuts shall not exceed 1.50 times the weight of 10 per cent, by count, of the smallest pistachio nuts.

Screened (or weighed) inshell pistachio nuts means inshell pistachio nuts whose number is over or under a stated figure per ounce or per 100 grams.

IV. PROVISIONS CONCERNING TOLERANCES

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

A. Quality tolerances

Defects allowed ³	Tolerances allowed (per cent of defective fruit by count)		
	Extra	Class I	Class II
(a) Total tolerances for shells no satisfying the minimum requirements, of which no more than: – Dark, stained shells ^a – cracks and laterally split shells – adhering hull and blemishes – unsplit shells	5	10	15
	2	3	4
	3	6	10 ^b
	1	4	5
	2	3	5
(b) Total tolerances for kernels no satisfying the minimum requirements, of which no more than: – not fully developed, shrivelled and stained kernels – rancid, decay, having a foreign smell or taste, damaged by insects ^c – mould ⁴ – empty nuts	3	6	12
	3	6	10
	1	2	3
	0,5	0,5	1
	1	3	5
(c) Other defects , not included in the total tolerance: – empty nuts, loose shells and shell fragments – foreign matter	Tolerances allowed (per cent of defects by weight) (calculated by weight, with regard to the total inshell weight basis)		
	1.5	3	6
	0,2	0,2	0,2

^a These tolerances would not count toward the total tolerances.

^b In Class “II”, when the marking indicates “mechanically opened” pistachios or nuts, this tolerance is increased to 20 per cent.

^c In all classes, not more than 0,25 per cent of nuts containing dead insects or parts of dead insects. Living pests are inadmissible in any class.

B. Mineral impurities for the kernel

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

³ Standard definitions of the defects are listed in the Annex of this document.

⁴ Reservation of Poland that the tolerance for mould should be 0.5 per cent regardless of the class.

V. PROVISIONS CONCERNING PRESENTATION

A. Uniformity

The contents of each package (or lot for produce presented in bulk) must be uniform and contain only inshell pistachio nuts of the same origin, crop year, quality and size (if sized).

The visible part of the contents of package (or lot for produce presented in bulk) must be representative of the entire contents. For “Extra class” and “Class I” the produce must be of the same variety and/or commercial type.

B. Packaging

Inshell pistachio nuts 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 paper or stamps bearing trade specifications is allowed provided the printing or labelling has been done with non-toxic ink or glue.

C. Presentation

Inshell pistachio nuts 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.

Packages must be free of all foreign matter.

VI. PROVISIONS CONCERNING MARKING

Each package⁵ 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 ⁶

⁵ *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.*

⁶ *The national legislation of a number of European countries requires the explicit declaration of the name and address.*

B. Nature of the produce

- Inshell Pistachio Nuts.
- Variety or Commercial type (optional)
- "mechanically opened" if appropriate

C. Origin of the produce

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

D. Commercial specifications

- Class
- Size (if sized)
- 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 Unshelled Pistachio Nuts)
Revised 2003 and published as a Recommendation for a one-year trial period

ANNEX
DEFINITIONS OF DEFECTS FOR INSHELL PISTACHIO NUTS

Defects of the shell:	any defect affecting the shell but not the kernel (blemishes, cracks, traces of hulls etc.).
Unsplit shells:	pistachio shells which are not split open, but contain a fully developed kernel.
Defects of the kernel:	any defect adversely affecting the appearance and edibility of the kernel.
Fully developed:	More than $\frac{3}{4}$ of the internal shell cavity is filled.
Shrivelled:	kernel which is seriously shrunken, wrinkled and tough.
Rancid:	oxidation of lipids producing a disagreeable flavour. an oily appearance of the flesh does not necessarily indicate a rancid condition.
Foreign smell or taste:	any odour or flavour that is not characteristic of the product.
Insect damage:	visible damage by insects or animal parasites, or the presence of dead insects or insect debris.
Mould:	mould filaments visible to the naked eye.
Empty nuts:	Nuts fill less than $\frac{1}{2}$ of shell cavity.
Foreign matter:	any substance other than pistachio hulls or kernels
Decay:	significant decomposition caused by the action of micro-organisms.
Clean:	practically free from plainly visible adhering dirt or other extraneous matter.
Stained Shell:	when an aggregate amount of brown to dark brown discoloration affects more than one-fourth of the total shell surface or more than one half of one side of the shell.
Laterally split shell:	Pistachio shells which are not split on suture but have lateral splitting.
Cracks:	Pistachio shells which have any crack other than lateral splitting.
Immature kernels	Kernels that are excessively thin or fill less than $\frac{3}{4}$ but not less than $\frac{1}{2}$ of the shell cavity
Adhering hull	An aggregate amount of hull material covering more than $\frac{1}{8}$ of the total shell surface
Blemish	A noticeable imperfection that significantly impairs the external appearance of the shell, excluding scars and dark spots, when in aggregate affects the equivalent of a circle of 3mm in diameter or 5mm in length
Commercial type	Pistachio nuts that belong to a similar varietal type or a mix of varieties defined by the producing country, that have similar characteristics and/or appearance or end uses.