

CODEX STANDARD FOR CANNED MANDARIN ORANGES ¹**CODEX STAN 68-1981****1. DESCRIPTION****1.1 Product Definition**

Canned mandarin oranges is the product:

- (a) prepared from sound, mature mandarin oranges conforming to the characteristics of *Citrus reticulata* Blanco (including all the suitable commercial varieties for canning);
- (b) packed with water or other suitable liquid packing medium; and
- (c) processed by heat in an appropriate manner before or after being sealed in a container so as to prevent spoilage. Before processing, the fruit shall have been properly washed and peeled and the membrane, fibre strands originating from albedo or core, and seeds (if any) shall have been substantially removed from the segments.

1.2 Style or Form

Canned mandarin oranges may be packed as:

- (a) Whole Segment Style - consists of fruit segments which are practically intact and also retain their original form but may be split just slightly.
- (b) Broken Segment Style - consists of portions of segments which retain at least one half of the original apparent size, or which are large enough to remain on a screen having 12 mm square openings, formed by a wire of 2 mm diameter.
- (c) Pieces Style - consists of portions of segments that are large enough to remain on a screen having 8 mm square openings formed by a wire of 2 mm diameter.

1.3 Other Styles

Any other presentation of the product shall be permitted provided that the product:

- (a) is sufficiently distinctive from other forms of presentation laid down in this standard;
- (b) meets all relevant requirements of this standard including requirements relating to limitations on defects, drained weight, and any other requirements in this standard which are applicable to that style in the standard which most closely resembles the style or styles intended to be provided for under this provision;
- (c) is adequately described on the label to avoid confusing or misleading the consumer.

¹ Formerly CAC/RS 68-1974.

1.4 Sizes in Whole Segment Style

1.4.1 Designation in accordance with size

Canned mandarin oranges in whole segment style may be designated according to size in the following manner:

Uniform single size

"Large" -	20 or less whole segments per 100 grammes of drained fruit
"Medium" -	21 to 35 whole segments per 100 grammes of drained fruit
"Small"-	36 or more whole segments per 100 grammes of drained fruit

Single sizes shall also meet the uniformity requirements of paragraph 2.2.5.

Mixed sizes

A mixture of two or more single sizes.

1.4.2 Compliance with single size designation

1.4.2.1 When the product is declared, presented or offered as conforming to the uniform size designation in paragraph 1.3.1 - other than "Mixed sizes" - the sample unit shall conform to the size classification specified for each single size. In the determination of compliance with size classifications, broken segments are disregarded.

1.4.2.2 Any sample unit or container that does not meet the count and uniformity requirements of the foregoing paragraph 1.3.2.1 shall be considered a "defective" for size classification.

1.4.2.3 A lot will be considered as meeting the criteria for a uniform size designation when the number of "defectives" as defined in paragraph 1.3.2.2 does not exceed the acceptance number (c) of the appropriate sampling plan in the Joint FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (1969) (AQL-6.5) (CAC/RM 42-1969) (see Codex Alimentarius Volume 13).

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Basic Ingredients

Mandarin oranges and packing media appropriate to the product as follows:

2.1.1 Packing Media ¹

- (a) **Water** - in which water is the sole packing medium;
- (b) **Citrus juice** - in which mandarin orange juice, or any other citrus juice, is the sole packing medium;
- (c) **Mixed citrus juices** - in which two or more citrus juices, which may include

¹ See Appendix to Part I.

mandarin orange juice are combined to form the packing medium;

- (d) **Water and citrus juice(s)** - in which water and mandarin orange juice, or water and any other citrus juice (singly or in combination) are combined to form the packing medium:
- (e) **With sugar(s)** - any of the foregoing packing media (a) through (d) may have one or more of the following sugars added: sucrose, invert sugar syrup, dextrose, fructose, fructose syrup, dried glucose syrup, glucose syrup, invert sugar.

2.1.2 Classification of packing media when sugars are added

2.1.2.1 When sugars are added to mandarin orange juice or other citrus juices, the liquid media shall be not less than 14° Brix and shall be classified on the basis of the cut-out strength as follows:

Lightly sweetened (name of fruit) juice - not less than 14° Brix
Heavily sweetened (name of fruit) juice - not less than 18° Brix

2.1.2.2 When sugars are added to water or water and mandarin orange juice or water and other citrus juices the liquid media shall be classified on the basis of the cut-out strength as follows:

- (a) Basic syrup strengths

Light syrup - not less than 14° Brix
Heavy syrup - not less than 18° Brix

- (b) Optional packing media

When not prohibited in the country of sale, the following packing media may be used:

	Slightly sweetened water)	
	Water slightly sweetened)	not less than 10° Brix but less than 14°
Brix	Extra light syrup)	
	Extra heavy syrup)	more than 22° Brix

2.1.3 The cut-out strength of sweetened juice or syrup shall be determined on sample average, but no container may have a Brix value lower than that of the minimum of the next category below, if such there be.

2.2 Quality Criteria

2.2.1 Colour

The colour of the segments shall be a rich yellow to orange, typical colour of properly prepared and properly processed fruit, free from any brown tinge and the liquid packing medium shall be reasonably clear except when it contains juice.

2.2.2 Flavour

Canned mandarin oranges shall have a normal flavour and odour free from flavours and odours foreign to the product.

2.2.3 Texture

The texture shall be reasonably firm and characteristic for the canned product and reasonably free from dry cells or fibrous portions affecting the appearance or edibility of the product.

2.2.4 Defects and allowances

Canned mandarin oranges shall be substantially free from defects within the limits set forth as follows:

Defect	Maximum Limit in the Drained Fruit
(a) Broken segments and pieces (as defined in 1.2) (Whole segment style)	7% m/m
(b) Pieces (as defined in 1.2 (Broken segment style)	15% m/m
(c) Membrane (Aggregate area)	7 cm ² /100 g (based on sample average)
(d) Fibre strands (Aggregate length)	5 cm/100 g (based on sample average)
(e) Seeds (that measure more than 4.0 mm in any diameter)	1/100 g (based on sample average)

2.2.5 Uniformity of size (Whole segment style - single sizes)

In the 95 percent, by count, of units (excluding broken segments) that are most uniform in size, the weight of the largest unit shall be no more than twice the weight of the smallest unit.

2.2.6 Classification of "defectives"

A container that fails to meet one or more of the applicable quality requirements, as set out in paragraphs 2.2.1 through 2.2.5 (except those based on sample average), shall be considered a "defective".

2.2.7 Acceptance

A lot will be considered as meeting the applicable quality requirements of paragraph 2.2 when:

- (a) the number of "defectives" as defined in paragraph 2.2.6 does not exceed the acceptance number (c) of the appropriate sampling plan in the Joint FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (1969) (AQL-6.5) (CAC/RM 42-1969 (see Codex Alimentarius Volume 13); and
- (b) the requirements of paragraph 2.2.5, which are based on sample average, are

complied with.

3. FOOD ADDITIVES

Maximum level

3.1 Acidifying agent

Citric acid

Limited by GMP

3.2 Anti-clouding agent

Methyl cellulose

10 mg/kg

4. CONTAMINANTS

Lead (Pb)

1 mg/kg

Tin (Sn)

250 mg/kg calculated as Sn

5. HYGIENE

5.1 It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 2 (1985) Codex Alimentarius Volume 1), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to this product.

5.2 To the extent possible in Good Manufacturing Practice, the product shall be free from objectionable matter.

5.3 When tested by appropriate methods of sampling and examination, the product:

- shall be free from microorganisms in amounts which may represent a hazard to health;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

6. WEIGHTS AND MEASURES

6.1 Fill of container

6.1.1 Minimum Fill

The container shall be well filled with fruit and the product (including packing medium) shall occupy not less than 90% of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

6.1.2 Classification of "Defectives"

A container that fails to meet the requirement for minimum fill (90 percent container capacity) of paragraph 6.1.1 shall be considered a "defective".

6.1.3 Acceptance

A lot will be considered as meeting the requirement of paragraph 6.1.1 when the number of "defectives", as defined in paragraph 6.1.2, does not exceed the acceptance number (c) of the appropriate sampling plan in the Joint FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (1969) (AQL-6.5) (CAC/RM 42-1969) (see Codex Alimentarius Volume 13).

6.1.4 Minimum drained weight

6.1.4.1 The drained weight of the product shall be not less than the following percentages, calculated on the basis of the weight of distilled water at 20°C which the sealed container will hold when completely filled.

Whole segment style	55%
Broken segment and Pieces styles	58%

6.1.4.2 The requirements for minimum drained weight shall be deemed to be complied with when the average drained weight of all containers examined is not less than the minimum required, provided that there is no unreasonable shortage in individual containers.

7. LABELLING

In addition to the requirements of the General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1985 (Rev. 1-1991) Codex Alimentarius Volume 1) the following specific provisions apply:

7.1 The Name of the Food

7.1.1 The name of the product shall be "Mandarin Oranges".

7.1.2 (a) The style, as appropriate, shall be declared as a part of the name or in close proximity to the name:

"Whole segments"
"Broken segments"
"Pieces"

(b) In the case of mixed sizes, such size designation shall be declared in close proximity to the style designation, e.g. "mixed sized whole segments".

7.1.3 **Other styles:** If the product is produced in accordance with the other styles provision (sub-section 1.3), the label shall contain in close proximity to the name of the product such additional words or phrases that will avoid misleading or confusing the consumer.

7.1.4 The packing medium shall be declared as part of the name or in close proximity to the name.

7.1.4.1 When the packing medium is composed of water or water and one or more citrus juices in which water predominates, it shall be declared as:

"In water" or "Packed in water".

7.1.4.2 When the packing medium is composed solely of mandarin orange juice, or any other single citrus juice, it shall be declared as:

"In mandarin orange juice" or "In (name of citrus) juice".

7.1.4.3 When the packing medium is composed of two or more citrus juices, which may include mandarin orange juice, it shall be declared as:

"In (name of citrus) juice" or "In citrus juices" or "In mixed citrus juices"

7.1.4.4 When sugars are added to mandarin orange juice or other citrus juices, the packing medium shall be declared as:

"Lightly sweetened (name of citrus) juice"
or
"Heavily sweetened (name of citrus) juice(s)"
or
"Lightly sweetened citrus juices"
or
"Heavily sweetened mixed citrus juice(s)",

as may be appropriate.

7.1.4.5 When sugars are added to water, or water and a single citrus juice (including mandarin orange juice) or water and two or more fruit juices, the packing medium shall be declared as:

"Light syrup" or "Heavy syrup"
or
"Water slightly sweetened" or "slightly sweetened water"
or
"Extra light syrup" or "Extra heavy syrup",

as may be appropriate.

7.1.4.6 When the packing medium contains water and mandarin orange juice or water and one or more citrus juice(s), in which the fruit juice comprises 50% or more by volume of the packing medium, it shall be designated to indicate the preponderance of such fruit juice, as, for example:

"Mandarin orange juice and water"
or
"(name of citrus) juice(s) and water".

7.2 List of ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with the General Standard for the Labelling of Prepackaged Foods CODEX STAN 1-1985 (Rev. 1-1991) Codex Alimentarius Volume 1), except that water need not be declared.

7.2.2 In the case of fruit juices made from concentrate, the fact of reconstitution shall be declared in the list of ingredients as follows "(name of fruit) juice made from concentrate" or "reconstituted (name of fruit) juice" or "(name of fruit) juice made from concentrated (name of fruit) juice".

7.3 Optional Declarations

7.3.1 Size classification of whole style

A size classification for Whole Segment style may be stated on the label if the pack complies with the appropriate requirements of paragraph 1.3.1 of this standard.

7.3.2 Size classification of whole style in uniform sizes

If the pack complies with the appropriate requirements of paragraph 1.3, a size classification for Whole Segment style in uniform sizes may be stated on the label as:

- (a) "Large", "Medium", or "Small" as appropriate; and/or
- (b) the number of units present in the container shown by a range of count, e.g. (number) to (number) whole segments".

8. METHODS OF ANALYSIS AND SAMPLING

See Codex Alimentarius Volume 13.