

CODEX STANDARD FOR QUICK FROZEN LEEK¹**CODEX STAN 104-1981****1. SCOPE**

This standard shall apply to quick frozen leek of the species *Allium porrum* L. as defined below and offered for direct consumption without further processing, except for sizing or repacking, if required. It does not apply to the product when indicated as intended for further processing or for other industrial purposes.

2. DESCRIPTION**2.1 Product Definition**

Quick frozen leek is the product prepared from fresh, clean, sound, edible parts of the leek plant conforming to the characteristics of the species *Allium porrum* L., and which have been trimmed, washed, possibly blanched to ensure adequate stability of colour and flavour during normal marketing cycles.

2.2 Process Definition

Quick frozen leek is the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product has reached -18°C (0°F) at the thermal centre after thermal stabilization. The recognized practice of repacking quick frozen products under controlled conditions is permitted.

2.3 Handling Practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the Recommended International Code of Practice for the Processing and Handling of Quick Frozen Foods (Ref. No. CAC/RCP 8-1976).

2.4 Presentation**2.4.1 Styles**

- (a) **Whole leek** - the leek plant with roots and non-tender leaves removed.
- (b) **Leek** - parts of the whole leek with a length, corresponding to the longest dimension of the package, but not less than 70 mm.
- (c) **Cut leek** - parts of the whole leek, cut perpendicularly to the longitudinal axis, minimum

¹ Formerly CAC/RS 104-1978.

length 20 mm, maximum length 60 mm.

- (d) **Leek rings** - parts of the whole leek, cut perpendicularly to the longitudinal axis into slices, not thinner than 10 mm and not thicker than 20 mm.
- (e) **Chopped leek** - the whole leek chopped into pieces, such that the original structure is almost entirely lost, resulting in a "unit" generally smaller than 15 mm in size.

2.4.2 Other Styles

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

- (a) is sufficiently distinctive from other forms of presentation laid down in this standard;
- (b) meets all other requirements of this standard;
- (c) is adequately described on the label to avoid confusing or misleading the consumer.

2.4.3 Colour

- (a) leek may be presented as white;
- (b) if leek is presented as "white", not more than 10% m/m shall be present of leaves or parts of leaves with a green colour.

2.4.4 Sizing

- (a) whole leek, may be presented as sized or unsized;
- (b) the minimum diameter of whole leek, measured perpendicularly to the axis immediately above the swelling at the neck shall be not less than 10 mm;
- (c) when sized, the difference between the largest and smallest leek in the same package, measured perpendicularly to the axis immediately above the swelling at the neck, shall be not more than 10 mm.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Optional Ingredients

3.1.1 Salt (sodium chloride)

3.1.2 Condiments, such as spices and herbs.

3.2 Quality Factors

3.2.1 General Requirements

Quick frozen leek shall:

- (a) have good colour characteristics;
- (b) be clean, sound, and practically free from foreign material;
- (c) be free from foreign flavour and odour, taking into consideration added optional ingredients;
- (d) have similar varietal characteristics;
- (e) be free from objectionable tough parts;

and with respect to visual defects or other defects subject to a tolerance, shall be:

- (a) practically free from sand and grit;
- (b) free from yellow and/or yellowish leaves;
- (c) reasonably free from damage such as staining, discolouration, or insect injury;
- (d) reasonably free from extraneous vegetable material (E.V.M.);
- (e) practically free from roots;
- (f) reasonably well trimmed;
- (g) practically free from loose or detached leaves (in whole style only).

3.2.2 Analytical Characteristics

Mineral impurities - not more than 0.1% m/m, measured on the whole product basis.

3.2.3 Definition of Visual Defects

- | | |
|---|---|
| (a) <i>Discolouration</i> | - discolouration of any kind on the product and which materially detracts from the appearance of the product; |
| Minor | - discolouration which is light in colour. Each area or combined area of 4 cm ² = 1 defect; |
| Major | - discolouration which is dark in colour. Each area or combined area of 4 cm ² = 1 defect. |
| (b) <i>Damaged</i> | - each leaf or part of leaf that is affected by blemishes, staining or insect injury; |
| (c) <i>Extraneous Vegetable Material (EVM)</i> | - each cm ² harmless vegetable material other than from the leek; |
| (d) <i>Roots</i> - | each disk of roots attached to the leek or loose; |
| (e) <i>Parts of roots</i> | - parts of roots attached to the leek or loose; |
| (f) <i>Poorly trimmed</i> | - the white or pale green portion is less than one-third of the total product; |

- for the presentation "white" (2.4.3) not more than 10% m/m of green leaves is permitted;
- (g) *Loose leaves*
 - leaf or part of it which is detached from the shaft (in whole style only).

3.2.4 **Standard Sample Size**

The standard sample size for segregating and evaluating visual defects shall be as follows:

Style	Standard Sample Size
Whole leek	500 grammes but not less than two pieces (for sizing 10 pieces)
Leek and cut leek	500 grammes
Leek rings	250 grammes
Chopped leek	250 grammes

3.2.5 **Method of Examination**

For separation and enumeration of visual defects the standard sample (see standard sample size) is placed in water in a deep tray, and the shafts or leaf portions separated one by one.

3.2.6 **Tolerances for Visual Defects**

Based on the standard sample sizes indicated in Section 3.2.4, visual defects shall be assigned points in accordance with the appropriate Table in this Section. The maximum number of defects permitted is the Total Allowable Points rating indicated for the respective defect categories Minor and Major or the Combined Total of the foregoing categories.

TABLE 1
Whole Leek (Sample Size 500 grammes but not less than two pieces)

Defect	Defect Categories		
	Minor	Major	Total
Discolouration			
Minor	1		
Major		2	
Damaged		2	
E.V.M.	1		
Roots		2	
Parts of roots	1		
Poorly trimmed		2	
Loose leaves	1		
TOTAL ALLOWABLE POINTS	8	6	10

TABLE 2
Leek, Cut Leek, Leek Rings and Chopped Leek
Standard Sample Size 500 grammes (Leek and Cut Leek)
Standard Sample Size 250 grammes (Leek Rings and Chopped Leek)

Defect	Defect Categories		
	Minor	Major	Total
Discolouration			
Minor	2		
Major		2	
Damaged		2	
E.V.M.	1		
Roots		2	
Parts of roots	1		
Poorly trimmed		2	
TOTAL ALLOWABLE POINTS:			
Leek and Cut Leek	10	10	12
Leek Rings and Chopped Leek	5	6	6
Leek			

3.2.7 Tolerances for Sizing

If size graded, the product shall contain not less than 80% by number of whole leek of the declared size.

3.3 Definition of "Defective" for Quality Factors

Any sample unit taken in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. No. CAC/RM 42-1969), (see Codex Alimentarius Volume 13) and which is adjusted to a standard sample size for applying the tolerances relating to "Visual Defects" shall be regarded as "defective" for the respective characteristics, as follows:

- (a) any sample unit that fails to meet the general requirements of Section 3.2.1;
- (b) any sample unit that fails to meet the analytical requirements of Section 3.2.2;
- (c) any sample unit that fails the Total Allowable Points for defect categories Minor or Major; or which fails the Total Allowable Points for the combined total of the respective defect categories as given in Section 3.2.6;
- (d) any sample unit that fails to comply with the sizing requirements of Section 3.2.7.

3.4 **Lot Acceptance for Quality Factors**

A lot is considered acceptable when the number of "defectives" as defined in Section 3.3 does not exceed the acceptance number (c) for the appropriate sample size as specified in the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. No. CAC/RM 42-1969), (see Codex Alimentarius Volume 13). In applying the acceptance procedure each "defective" (as defined in Section 3.3 sub-paragraphs (a) or (b) or (c) or (d) is treated individually for the respective characteristics.

4. **FOOD ADDITIVES**

None permitted.

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. LABELLING

In addition to the requirements of the Codex General Standard for the Labelling of Prepackaged Foods (Ref. No. CODEX STAN 1-1985), (Rev. 1-1991) Codex Alimentarius Volume 1, the following specific provisions apply:

6.1 The Name of the Food

6.1.1 The name of the food as declared on the label shall include the designation "leek".

6.1.2 The name of the food shall also include the style as appropriate: "whole", "cut", "rings" or "chopped" in accordance with Section 2.4.1 and when presented as white the word "white" in accordance with Section 2.4.3.

6.1.3 If the product is presented in accordance with sub-section 2.4.2 the label shall contain in close proximity to the word leek such additional words or phrases that will avoid misleading or confusing the consumer.

6.1.4 The words "quick frozen", shall also appear on the label, except that the term "frozen"² may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of this standard.

6.1.5 Where a characterizing ingredient has been added, this shall be stated as "with x" or "X flavoured" as appropriate.

6.2 Size Designation

If a term designating the size of whole leek is used, it shall:

- (a) be supported by a statement of the predominant range of the maximum diameter of the leek in millimeters, or fractions of an inch in those countries where the English system is in general use; and/or
- (b) conform to the customary method of declaring size in the country in which the product is sold.

6.3 Additional Requirements

The packages shall bear clear directions for keeping from the time they are purchased from the retailer to the time of their use, as well as directions for cooking.

² "frozen": This term is used as an alternative to "quick frozen" in some English speaking countries.

6.4 **Bulk Packs**

In the case of quick frozen leek in bulk the information required above shall either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "quick frozen" (the term "frozen" may be used in accordance with Section 6.1.4 of this standard) and the name and address of the manufacturer or packer shall appear on the container.

7. **PACKAGING**

Packaging used for quick frozen leek shall:

- (a) protect the organoleptic and other quality characteristics of the product;
- (b) protect the product against microbiological and other contamination;
- (c) protect the product from dehydration, and where appropriate, leakage as far as technologically practicable;
- (d) not pass to the product any odour, taste, colour or other foreign characteristics, throughout the processing (where applicable) and distribution of the product up to the time of final sale.

8. **METHODS OF ANALYSIS AND SAMPLING**

See Codex Alimentarius Volume 13.