
International Standard



6539

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Cinnamon [type Sri Lanka (Ceylon), type Seychelles and type Madagascar], whole or ground (powdered) — Specification

Cannelle [type Sri Lanka (Ceylan), type Seychelles et type Madagascar] entière ou en poudre — Spécifications

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6539 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in October 1978.

It has been approved by the member bodies of the following countries :

Brazil	Hungary	South Africa, Rep. of
Bulgaria	India	Spain
Canada	Ireland	Sri Lanka
Chile	Israel	Thailand
Cyprus	Kenya	Turkey
Czechoslovakia	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Netherlands	USA
Ethiopia	Poland	USSR
France	Romania	Yugoslavia

No member body expressed disapproval of the document.

Cinnamon [type Sri Lanka (Ceylon), type Seychelles and type Madagascar], whole or ground (powdered) — Specification

1 Scope and field of application

This International Standard specifies requirements for whole or ground (powdered) cinnamon [type Sri Lanka (Ceylon), type Seychelles and type Madagascar] constituted by the bark of *Cinnamomum zeylanicum* Blume.

Recommendations relating to storage and transport conditions are given in annex B.

NOTE — Requirements for cassia [type China, type Indonesia and type Viet Nam (Saigon)] are given in ISO 6538.

2 References

ISO 927, *Spices and condiments — Determination of extraneous matter content.*

ISO 928, *Spices and condiments — Determination of total ash.*

ISO 930, *Spices and condiments — Determination of acid-insoluble ash.*

ISO 939, *Spices and condiments — Determination of moisture content — Entrainment method.*

ISO 948, *Spices and condiments — Sampling.*

ISO 1208, *Ground spices — Determination of filth (Reference method).*

ISO 2825, *Spices and condiments — Preparation of a ground sample for analysis.*

ISO 6571, *Spices and condiments — Determination of volatile oil content.*¹⁾

3 Definitions

3.1 cinnamon quills (full tubes) : Scraped peel of the inner bark of mature plantation cinnamon shoots joined together by

overlaps, the hollow of which has been filled with small pieces of the same peel and thereafter dried in the sun after air curing.

3.2 cinnamon quillings (broken tubes) : Broken pieces and splits of varying sizes of all grades of cinnamon quills.

3.3 cinnamon featherings : Pieces of inner bark obtained by peeling and/or scraping the bark of small twigs and stalks of plantation cinnamon shoots which may include a quantity of chips as specified.

3.4 cinnamon chips : Dried unpeelable bark of plantation cinnamon inclusive of the outer bark which has been obtained by beating or scraping the shoots.

3.5 cinnamon powder : Ground cinnamon.

3.6 whole cinnamon : All commercial forms of cinnamon except cinnamon powder.

4 Types and classification

4.1 Types

4.1.1 Cinnamon, type Sri Lanka (Ceylon) : The dried bark of cultivated varieties of the species *Cinnamomum zeylanicum* Blume (family Lauraceae).

Cinnamon, type Sri Lanka (Ceylon), is produced in four forms :

- a) quills (see 3.1);
- b) quillings (see 3.2);
- c) featherings (see 3.3);
- d) chips (see 3.4).

1) At present at the stage of draft.

4.1.2 Cinnamon, type Seychelles : The bark of trunks or branches of *Cinnamomum zeylanicum* Blume, cultivated on the Seychelles.

Cinnamon, type Seychelles, is produced in three forms :

a) rough cinnamon bark, which consists of slightly curved, elongated, irregular, medium or small pieces of the whole unscraped bark;

b) scraped cinnamon bark, which is obtained from younger shoots from bushes of the same species; the shoots are scraped with a curved knife before the bark is detached from the wood;

c) quills and quillings, which are prepared from the young shoots of bushes, in a way similar to that used for cinnamon, type Sri Lanka (Ceylon).

4.1.3 Cinnamon, type Madagascar : The bark of trunks or branches of *Cinnamomum zeylanicum* Blume, growing wild on Madagascar. It is produced either in the form of simple, hollow tubes of unscraped or scraped bark, of rather coarse appearance, about 30 cm long, cut from smaller branches with a

knife, or more usually in the form of unscraped or scraped pieces of bark from the larger branches and trunks, broken off with the flat side of a hatchet.

4.2 Commercial grades

4.2.1 Cinnamon, type Sri Lanka (Ceylon)

4.2.1.1 Quills

For classification, see table 1.

4.2.1.2 Quillings

Quillings may contain up to 3 % (m/m) of featherings and chips.

4.2.1.3 Featherings

Featherings may contain up to 5 % (m/m) of chips.

4.2.1.4 Chips

Chips shall consist of well dried, hand-picked and clean unpeelable cinnamon bark.

Table 1 — Classification of cinnamon quills, type Sri Lanka (Ceylon)

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Commercial designation of the grades and qualities	Diameter of quills mm, max.	Number of whole quills (1 050 mm) per kg min.	Extent of foxing ¹⁾ % max. ²⁾	Minimum length of quills in a bale ³⁾ mm	Pieces of tubes and broken pieces of the same quality per bale % (m/m) max.
Alba	6	45	Nil	200	1
Continental					
C 00000 Special	6	35	10	200	1
C 00000	10	31	10		
C 0000	13	24	10		
C 000	16	22	15		
C 00	17	20	20		
C 0	19	18	25		
Mexican					
M 00000 Special	16	22	50	200	2
M 00000	16	22	60		
M 0000	19	18	60		
Hamburg					
H 1	23	11	25	150	3
H 2	25	9	40		
H 3	38	7	65		

1) **foxing** : The occurrence of reddish-brown patches on the surface of the quills, which may become dark brown with time. Foxing can be

- a) superficial ("malkorahedi");
- b) heavy ("korahedi").

This sub-division is based on the depth of the patches.

2) Extent determined by visual examination.

3) **bale** : A package of any one particular grade of quills wrapped with suitable material for export.

4.2.2 Cinnamon, type Seychelles and type Madagascar

For classification, see table 2.

Table 2 — Classification of cinnamon, type Seychelles and type Madagascar

Commercial designation of the grade	Physical characteristics of the bark
1 Whole tubes (full tubes)	Tubes of length about 15 cm and bark thickness up to 1 mm
2 Pieces of scraped bark	Broken pieces, rough and grooved scraped bark of thickness up to 2 mm
3 Pieces of unscraped bark	Broken pieces, rough and grooved, of width up to about 3 cm and length up to 20 cm. The bark can be up to 5 mm thick
4 Chips, flakes of unscraped bark	Small pieces of unscraped bark of cinnamon stems

5 Cinnamon powder

The powder shall be constituted solely by the types of the cinnamon listed in clause 4.

NOTE — If there is a designation of origin, the powder shall be prepared exclusively from the barks concerned.

6 Requirements

6.1 Flavour

The flavour of cinnamon shall be fresh and characteristic of the spice of the origin concerned. It shall be free from foreign flavours, including mustiness.

6.2 Colour

Cinnamon powder shall be of a yellowish to reddish brown colour.

6.3 Freedom from moulds, insects, etc.

Whole cinnamon shall be free from living insects, moulds, mites and insect remains, for example cocoons, and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision), with such magnification as may be necessary in any particular case. If the magnification exceeds X 10, this fact shall be stated in the test report.

In case of dispute, contamination in cinnamon powder shall be determined by the method described in ISO 1208.

6.4 Extraneous matter

The proportion of extraneous matter in whole cinnamon shall not exceed 1 % (*m/m*) when determined by the method described in ISO 927.

Extraneous matter comprises leaves, stems, chaff and other vegetable matter. The only mineral matter permitted is sand, earth and dust.

In the case of cinnamon quills, type Sri Lanka, take about 110 g of quills per bale of Continental grade and 230 g of quills per bale of Mexican or Hamburg grades, break them up and inspect the filling. Unscraped inner bark, scrapings, foreign matter, bark of wild cinnamon and other genera shall not be present.

6.5 Chemical requirements¹⁾

Whole cinnamon and cinnamon powder shall comply with the requirements given in table 3.

Table 3 — Chemical requirements

Characteristic	Requirements		Method of test
	Cinnamon, type Sri Lanka	Cinnamon, type Seychelles and type Madagascar	
Moisture content, % (<i>m/m</i>), max.	12,0	12,0	ISO 939
Total ash, % (<i>m/m</i>) on dry basis, max.	5,0	7,0	ISO 928
Acid-insoluble ash, % (<i>m/m</i>) on dry basis, max.	1,0	2,0	ISO 930
Volatile oils ml/100 g on dry basis, — whole cinnamon — ground (powdered) cinnamon	1,0* 0,7*	0,4* 0,3*	ISO 6571

* Tentative values.

7 Sampling

Sample cinnamon quills by the method described in annex A.

Sample all other forms of cinnamon in accordance with ISO 948.

8 Methods of test

8.1 Samples of whole cinnamon and cinnamon powder shall be tested for conformity with the requirements of this International Standard by the methods of test referred to in table 3.

1) Limits for toxic substances will be included later, in accordance with the recommendations of the FAO/WHO Codex Alimentarius Commission.

8.2 Ground cinnamon shall be examined by microscope. It shall not contain any morphological extraneous matter.

8.3 For the preparation of a ground sample for analysis, coarsely crush the product until particles of 5 mm or less are obtained, before applying the general method described in ISO 2825.

9 Packing and marking

9.1 Packing

9.1.1 Whole cinnamon

Whole cinnamon shall be packed in clean, sound and dry containers made of a material which does not affect the product or its flavour.

The different commercial classes are usually packed as follows :

- Cinnamon, type Sri Lanka : in cylindrical bales of about 45 kg;
- Cinnamon, type Seychelles and type Madagascar : in bales of about 50 kg;
- Cinnamon, type Seychelles quills and quillings : in wooden boxes of about 100 to 150 kg.

9.1.2 Cinnamon powder

Cinnamon powder shall be packed in the same type of containers as specified in 9.1.1 for whole cinnamon. In addition, the containers shall protect the cinnamon powder against moisture and loss of volatile matter.

9.2 Marking

9.2.1 Whole cinnamon

The following particulars shall be marked or labelled on each container :

- a) name of the material, and the trade name or brand name, if any;
- b) name and address of the manufacturer or packer;
- c) batch or code number;
- d) net mass;
- e) grade of the material;
- f) producing country;
- g) any other marking required by the purchaser, such as year of harvest and date of packing (if known).

9.2.2 Cinnamon powder

The following particulars shall be marked or labelled on each container :

- a) name of the material, and the trade name or brand name, if any;
- b) name and address of the manufacturer or packer;
- c) batch or code number;
- d) net mass;
- e) any other marking required by the purchaser, such as date of packing (if known).

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Annex A

Sampling of cinnamon quills

A.1 Definitions

A.1.1 consignment : The quantity of packages of cinnamon quills submitted at one time and covered by a particular contract or shipping document. It may be composed of one or more lots.

A.1.2 lot : All the packages in a single consignment of cinnamon quills pertaining to the same grade. (See clause 4.)

A.1.3 defective package : Any package of cinnamon quills not conforming to any one or more of the requirements of this International Standard.

A.2 Number of packages to be taken

The number (n) of packages to be taken from a lot depends on the size of the lot and shall be in accordance with table 4.

Table 4 — Number of packages to be taken for inspection

Number of packages in the lot (N)	Number of packages to be taken (n)
1 to 5	All
6 to 49	10 % of the number of packages
50 to 100	10 % of the number of packages
Over 100	The square root of the number of packages rounded to the nearest whole number

A.3 Testing of samples and criterion for conformity

A.3.1 All the packages taken in accordance with clause A.2 shall be used individually to test for conformity with all the requirements given in clauses 4, 5 and 6 of this International Standard.

A.3.2 The lot shall be considered as conforming to the requirements of this International Standard if the number of defective packages in the sample tested is less than or equal to the corresponding acceptance number given in table 5.

Table 5 — Acceptance number

Number of packages tested	Acceptance number
Up to 12	0
13 to 20	1
21 to 35	2
36 to 50	3
51 to 75	4
Over 75	5

Annex B

Recommendations relating to storage and transport conditions

(This annex does not form part of the standard.)

- B.1** Containers of cinnamon should be stored in covered premises, well protected from the sun, rain and excessive heat.
- B.2** The store room should be dry, free from objectionable odours and proofed against entry of insects and vermin. The ventilation should be controlled so as to give good ventilation under dry conditions and to be fully closed under damp conditions. In a storage warehouse, suitable facilities should be available for fumigation.
- B.3** The containers should be so handled and transported that they are protected from the rain, from the sun or other source of excessive heat, from objectionable odours and from cross-infestation, especially in the holds of ships.

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