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**Dehydrated onion (*Allium cepa*  
Linnaeus) — Specification**

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Reference number  
ISO 5559:1995(E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5559 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Subcommittee SC 7, *Spices and condiments*.

This third edition cancels and replaces the second edition (ISO 5559:1983), which has been technically revised.

Annex A forms an integral part of this International Standard. Annexes B, C, D and E are for information only.

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# Dehydrated onion (*Allium cepa* Linnaeus) — Specification

## 1 Scope

**1.1** This International Standard specifies requirements for dehydrated onion (*Allium cepa* Linnaeus) in its various commercial forms.

NOTE 1 The main commercial forms are given in annex B, for information only.

**1.2** Recommendations relating to microbiological requirements are given in annex C, without prejudice to the national legislation applicable in different countries.

**1.3** Recommendations relating to storage and transport are given in annex D.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 927:1982, *Spices and condiments — Determination of extraneous matter content.*

ISO 928:1980, *Spices and condiments — Determination of total ash.*

ISO 930:1980, *Spices and condiments — Determination of acid-insoluble ash.*

ISO 948:1980, *Spices and condiments — Sampling.*

ISO 1026:1982, *Fruit and vegetable products — Determination of dry matter content by drying under reduced pressure and of water content by azeotropic distillation.*

ISO 1208:1982, *Spices and condiments — Determination of filth.*

ISO 5498:1981, *Agricultural food products — Determination of crude fibre content — General method.*

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 dehydrated onion:** Finished product obtained on drying the bulbs of any onion cultivars (*Allium cepa* Linnaeus) without any bleaching or precooking, the bulbs being sound and practically free from moulds, diseases, soil, outer skins, stems, leaves and roots.

**3.2 extraneous matter:** Vegetable matter originating exclusively from plants, such as particles from skins and roots.

## 4 Requirements

### 4.1 Organoleptic specifications

#### 4.1.1 General

The dehydrated onion shall conform to the requirements of this International Standard and on rehydration shall regain characteristics similar to those of fresh onion.

#### 4.1.2 Colour

The colour of the dehydrated onion shall be characteristic of the cultivar used, that is, between white

and cream when the product has been prepared from white and yellow onions, and between pink and red when red onions have been used.

The product shall be practically free from scorched, toasted and baked particles.

#### 4.1.3 Odour

The odour of the dehydrated onion shall be characteristic, and free from foreign odours and off odours.

#### 4.1.4 Flavour

Since the flavour of the dehydrated onion can be assessed only after rehydration, apply the method described in annex A, and then proceed with the sensory evaluation.

The flavour shall be characteristic of parboiled onions and free from foreign flavours and off flavours.

#### 4.2 Freedom from insects, moulds, etc.

Dehydrated onion shall be free from living insects, and practically free from moulds, dead insects, insect

fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision) or with such magnification as may be necessary in any particular case. If the magnification exceeds  $\times 10$ , this fact shall be mentioned in the test report.

In cases of dispute, the contamination of onion in powder form shall be determined by using the method specified in ISO 1208.

#### 4.3 Extraneous matter

The total percentage of extraneous matter, as defined in 3.2 and determined in accordance with ISO 927, shall not exceed the value given in table 1.

#### 4.4 Classification

Dehydrated onion is classified according to its colour, presentation and extraneous matter content in accordance with the requirements given in table 1.

#### 4.5 Chemical requirements

Dehydrated onion shall comply with the requirements specified in table 2.

Table 1 — Classification of dehydrated onion

Characteristic	Type of onion						
	White	Yellow			Red		
	Categories						
	Extra	Extra	1	2	Extra	1	2
Extraneous matter, % (m/m), max.	0,5	1	2	5	1	2	5

Table 2 — Chemical requirements

Characteristic	Requirement	Test method
Moisture content, % (m/m), max.	6	ISO 1026 <sup>1)</sup>
Total ash, % (m/m), on dry basis, max.	5	ISO 928
Acid-insoluble ash, % (m/m), dry basis, max.	0,5	ISO 930
Crude fibre content, % (m/m) max.	30	ISO 5498

1) This method to determine the moisture content is used because of the high sugar content of onions; a magnetic stirrer should be used to keep the test portion suspended in the liquid and thus avoid the danger of frothing and caramelization.

## 5 Sampling

### 5.1 Dehydrated onion powder, grits, flakes or granules

Sample the product in accordance with ISO 948, using a conical sampler or other suitable implement to remove aseptically a representative sample.

### 5.2 Dehydrated onion slices

Certain problems arise as a result of the friability of the product and the danger of settling within the container. It may therefore be necessary to take the entire contents of a single container because, during transport, the onion may settle with larger pieces towards the top and smaller pieces towards the bottom.

The principles of the method described in ISO 948 apply with the modifications given in 5.2.1 and 5.2.2.

#### 5.2.1 Number of containers to be taken

Take from the lot between 0,5 % and 1,0 % of the containers, using a table of random numbers agreed between the interested parties. If no table of random numbers is available, take every  $n^{\text{th}}$  container.

#### 5.2.2 Preparation of bulk sample

Sieve the contents of each container according to the commercial form considered (see annex B). Prepare the bulk sample by mixing portions of the different sieved fractions in the proportions determined by sieving. The size of the bulk sample shall be at least three times the quantity of product necessary to carry out all the tests required by this International Standard.

## 6 Test methods

Samples of dehydrated onion shall be tested for conformity with the requirements of this International standard using the test methods specified in 4.2, 4.3, 5.1, 5.2 and table 2.

## 7 Packing and marking

### 7.1 Packing

Dehydrated onion shall be packed in clean, sound and dry containers made of a material which does not affect the product but which protects it from light and from the ingress of moisture.

### 7.2 Marking

The following particulars shall be marked directly on each package or shall be marked on a label attached to the package:

- a) name of the product and botanical name and tradename, if any;
- b) name and address of the producer or packer, or trademark, if any;
- c) code or batch number;
- d) net mass;
- e) producing country;
- f) any other information requested by the purchaser, such as year of production and date of packing, if known;
- g) reference to this International Standard;
- h) whether the product contains additives, and which ones, in the case of countries where they are permitted.

## Annex A

(normative)

### Method of rehydration for sensory evaluation of dehydrated onion

#### A.1 Apparatus

**A.1.1 Vessel**, of about 500 ml capacity, which will not impart a foreign taste or affect the colour of the preparation.

**A.1.2 Dish**, made of porcelain or white earthenware.

#### A.1.3 Stainless steel spoon

#### A.2 Water

Use natural potable water, as neutral as possible.

#### A.3 Preparation

Weigh  $5 \text{ g} \pm 0,1 \text{ g}$  of the sample and transfer it to the

vessel (A.1.1) containing 250 ml of cold water (A.2). Bring to the boil and immediately turn off the heat source. Leave to simmer in this way for  $10 \text{ min} \pm 1 \text{ min}$ . Re-adjust the volume to about 250 ml with water (A.2) and pour into the dish (A.1.2).

Immediately carry out sensory evaluation by evaluating the different characteristics in the following order:

- appearance of the cooking water (colour, clarity);
- colour of the preparation;
- odour;
- tenderness (in the case of onion in pieces);
- overall flavour.

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