International Standard 5559

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Dehydrated onion — Specification

Oignon déshydraté — Spécifications

Second edition — 1983-04-01

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UDC 635.25 : 664.844 **Ref. No. ISO 5559-1983 (E)**

Descriptors : agricultural products, vegetables, onions, dried foods, specifications, chemical properties, marking.

Foreword

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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 5559 was developed by Technical Committee ISO/TC 34, *Agricultural food products*.

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 5559-1981), which had been approved by the member bodies of the following countries :

Australia
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The member bodies of the following countries had expressed disapproval of the document on technical grounds :

Canada
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Printed in Switzerland

Dehydrated onion — Specification

1 Scope and field of application

1.1 This International Standard specifies requirements for dehydrated onion in its various commercial forms (the main forms are listed in annex A).

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

NOTE — At present, microbiological requirements are not specified. However, requirements relating to certain micro-organisms may be incorporated when data collected on the basis of standard methods become available. In particular, investigations may be carried out to assess the need for specifying the absence of *Salmonella* spp and presumptive enterotoxic staphylococci. Requirements relating to aerobic, mesophilic, spore-forming organisms, *Escherichia coli*, spores of mesophilic sulphite-reducing clostridia, and yeasts and moulds may also be considered as quality indicators.

2 References

ISO 565, *Test sieves — Woven metal wire cloth and perforated plate — Nominal sizes of apertures.*

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.*

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

3 Requirements

3.1 Description

3.1.1 Dehydrated onion is the product obtained exclusively from bulbs of sound onions (*Allium cepa* Linnaeus), practically free from moulds, disease, soil, outer skins, stems, leaves and roots, by removal of most of the moisture using methods allowing the characteristics of the fresh product to be regained on rehydration.

3.1.2 The colour shall be characteristic of the cultivar used, i.e. between white and cream when the product has been prepared from white or yellow onions, and between pink and reddish when red onions have been used.

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

3.2 Odour and flavour

3.2.1 Odour

The odour of the dehydrated onion shall be characteristic and free from foreign odours and off-odours such as those resulting from musty, rancid, fermented or scorched particles.

3.2.2 Flavour

The flavour of the dehydrated onion can be assessed after rehydration in accordance with annex B. The flavour of the rehydrated product shall be characteristic of parboiled onions and free from foreign flavours or off-flavours such as those resulting from musty, rancid, fermented or scorched particles.

3.3 Freedom from contamination

The dehydrated onion shall be free from living insects, and shall be practically free from moulds, 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 onion powder and onion grits shall be determined in accordance with ISO 1208.

3.4 *Extraneous matter*

The total proportion of extraneous matter, determined in accordance with ISO 927, and of extraneous matter originating from the plant (coarse particles, papery membranes, roots, etc.) shall not exceed 0,5 % (m/m).

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3.5 Classification

Sieving for classification of dehydrated onion into commercial forms may be carried out in accordance with annex A.

3.6 Sensory evaluation

Rehydrate and test a sample of the onion in accordance with annex B.

3.7 Chemical characteristics[1)]

The dehydrated onion shall comply with the requirements given in the table.

4 Sampling

4.1 Onion powder or grits

Sample the product in accordance with ISO 948, using a conical sampler.

4.2 Onion slices or rings, flakes or pieces

In the sampling of dehydrated onion slices or rings, flakes or pieces, special 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 the smaller pieces towards the bottom.

The principles of the method described in ISO 948 apply, with the modifications given below.

4.2.1 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, use the following procedure.

Starting from any container, count the containers as 1, 2, 3, etc., up to r and so on. Withdraw from the lot every rth container thus counted for sampling; the value of r is equal to

$$\frac{N}{n}$$

where

N is the total number of containers in the lot;

n is the number of containers to be sampled.

If r is a fractional number, take as its value the integral part of it.

At least one container shall be taken.

4.2.2 Preparation of bulk sample

Sieve the contents of each container according to the commercial form considered [see annex A, a), b), c) or d)]. 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.

5 Methods of test

The samples of dehydrated onion shall be tested for conformity with the requirements of this International Standard by the methods of test referred to in 3.3, 3.4, 3.6 and the table.

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Table — Chemical requirements for dehydrated onion

Characteristic	Requirement		Method of test
	Onion slices, flakes, pieces, kibbled	Onion powder, grits	
Moisture content, % (m/m), max.	8	6	ISO 939*
Total ash, % (m/m) (dry basis), max.	5,5	5,5	ISO 928
Acid-insoluble ash, % (m/m) (dry basis), max.	0,5	0,5	ISO 930
Crude fibre content, % (m/m), max.	* *	* *	ISO 5498

* In view of the high sugar content of onion, a magnetic stirrer should be used to keep the test portion suspended in the liquid and thus avoid the danger of frothing and caramelization.

* * Values to be added later.

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

6 Packing and marking

6.1 Packing

The dehydrated onion shall be packed in clean and sound containers made of materials which do not affect the product and which protect it from light and moisture.

6.2 Marking

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

a) name of the product and the trade or brand name, if any;

b) name and address of the manufacturer or packer, or their registered brand names;

c) name of producing country;

d) net mass;

e) year of production;

f) any other information as may be required by the interested parties or the importers;

g) if appropriate, a statement that the product contains additives.

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Annex A

Commercial forms of dehydrated onion

The various forms of dehydrated onion are all produced by slicing peeled sound onions into flat slices (of thickness agreed between the interested parties), which are dehydrated, graded and further processed as necessary.

The following broad categories are recognized in the trade, though commercial contracts may include modified requirements for particle size :

a) **onion slices or rings** (French : "oignon en tranches ou en lanières") : Dehydrated onion in pieces larger than 4 mm (largest dimension) — rings and pieces of onion obtained by cutting onions into slices and removing broken pieces smaller than 4 mm by sieving.

b) **onion flakes or onion in pieces** (French : "oignon en flocons ou en morceaux") : Dehydrated onion passing a sieve of 4 mm aperture size but retained on a sieve of 1,25 mm aperture size — a product comprising particles without definite shape.

c) **onion grits** (French : "oignon en semoule") : Dehydrated onion passing a sieve of 1,25 mm aperture size but retained on a sieve of 250 µm aperture size.

d) **onion powder** (French : "oignon en poudre") : Dehydrated onion passing a sieve of 250 µm aperture size — a uniform product of which 95 % passes the sieve.

NOTE — In testing for particle size, use sieves of the aperture sizes specified in ISO 565.

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Annex B

Rehydration and sensory evaluation of dehydrated onion (all forms)

B.1 Apparatus

B.1.1 Vessel, made of a material which will not affect the taste or colour of the preparation.

B.1.2 Dish, made of white porcelain, glazed earthenware or glass.

B.1.3 Stainless steel spoon.

B.2 Water

Use distilled or de-ionized water.

B.3 Preparation

Weigh 10 ± 0,1 g of the sample and transfer it to the vessel (B.1.1) containing 500 ml of cold water (B.2). Bring to the boil and maintain at 99 °C, the vessel remaining uncovered, for

— 10 ± 1 min in the case of products prepared from white or yellow onions;

— 15 ± 1 min in the case of products prepared from red onions.

Make up the volume to 500 ml with cold water (B.2), and pour into the dish (B.1.2).

B.4 Sensory evaluation

Immediately carry out sensory evaluation of the following characteristics, in the order given :

— colour;

— appearance of the cooking water (colour and clarity);

— odour;

— flavour;

— tenderness (in the case of onion in pieces).