

# International Standard



# 5560

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

## Dehydrated garlic — Specification

*Ail déshydraté — Spécifications*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (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 set up 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 5560 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in November 1978.

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

|                     |                |                       |
|---------------------|----------------|-----------------------|
| Australia           | Hungary        | South Africa, Rep. of |
| Brazil              | India          | Spain                 |
| Bulgaria            | Israel         | Thailand              |
| Chile               | Kenya          | Turkey                |
| Cyprus              | Korea, Rep. of | United Kingdom        |
| Czechoslovakia      | Mexico         | USA                   |
| Egypt, Arab Rep. of | Netherlands    | USSR                  |
| Ethiopia            | Poland         | Yugoslavia            |
| France              | Romania        |                       |

The member body of the following country expressed disapproval of the document on technical grounds :

Canada

# Dehydrated garlic — Specification

## 1 Scope and field of application

1.1 This International Standard specifies requirements for dehydrated garlic 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 enterotoxigenic 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 (Reference method).<sup>1)</sup>*

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

## 3 Requirements

### 3.1 Description

3.1.1 Dehydrated garlic is the product obtained exclusively from sound cloves of garlic (*Allium sativum* Linnaeus), practically free from moulds, disease, soil, outer skins, stems 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 between white and pale cream.

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 garlic shall be characteristic, pungent 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 garlic can be assessed after rehydration in accordance with annex B. The flavour of the rehydrated product shall be characteristic of parboiled garlic 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 garlic 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.

1) At present at the stage of draft.

In case of dispute, contamination in garlic powder and garlic 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).

### 3.5 Classification

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

### 3.6 Sensory evaluation

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

### 3.7 Chemical characteristics<sup>1)</sup>

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

## 4 Sampling

### 4.1 Garlic powder or grits

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

### 4.2 Garlic slices or rings, flakes or pieces

In the sampling of dehydrated garlic 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 garlic 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 about 2 % of the containers, using a table of random numbers agreed between the interested parties. If no table of random numbers is available, take every  $n$ th container, where

$$n = \frac{N}{2}$$

$N$  being the total number of containers.

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.

Table – Chemical requirements for dehydrated garlic

| Characteristic                                                        | Requirement                          |                      | Method of test |
|-----------------------------------------------------------------------|--------------------------------------|----------------------|----------------|
|                                                                       | Garlic slices, rings, flakes, pieces | Garlic 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        |
| Volatile organic sulphur compounds content, % (m/m) (dry basis), min. | *                                    | *                    | **             |
| Crude fibre content, % (m/m) max.                                     | *                                    | *                    | ISO 5498       |

\* Values to be added later.

\*\* International Standard in preparation.

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

## 5 Methods of test

The samples of dehydrated garlic 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.

## 6 Packing and marking

### 6.1 Packing

The dehydrated garlic 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 garlic

The various forms of dehydrated garlic are all produced by slicing peeled sound garlic cloves 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) **garlic slices or rings** (French : "ail en tranches ou en lanières") : Dehydrated garlic in pieces larger than 4 mm (largest dimension) — slices and pieces of garlic obtained by cutting garlic cloves into slices and removing broken pieces smaller than 4 mm by sieving.

b) **garlic flakes or garlic in pieces** (French : "ail en flocons ou en morceaux") : Dehydrated garlic 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) **garlic grits** (French : "ail en semoule") : Dehydrated garlic passing a sieve of 1,25 mm aperture size but retained on a sieve of 0,250 mm aperture size.

d) **garlic powder** (French : "ail en poudre") : Dehydrated garlic passing a sieve of 0,250 mm 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.