**Tapioca pearls — Specification**

#### Foreword

The African Organization for Standardization (ARSO) is an African intergovernmental organization established by the United Nations Economic Commission for Africa (UNECA) and the Organization of African Unity (AU) in 1977. One of the fundamental mandates of ARSO is to develop and harmonize African Standards (ARS) for the purpose of enhancing Africa’s internal trading capacity, increase Africa’s product and service competitiveness globally and uplift the welfare of African communities. The work of preparing African Standards is normally carried out through ARSO technical committees. Each Member State interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, Regional Economic Communities (RECs), governmental and non-governmental organizations, in liaison with ARSO, also take part in the work.

ARSO Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ARSO shall not be held responsible for identifying any or all such patent rights.

This African Standard was prepared by ARSO PC 02 Cassava value chain products

© African Organisation for Standardisation 2024 — All rights reserved[[1]](#footnote-1)\*

ARSO Central Secretariat

International House 3rd Floor

P. O. Box 57363 — 00200 City Square

NAIROBI, KENYA

Tel. +254-20-2224561, +254-20-3311641, +254-20-3311608

E-mail: [arso@arso-oran.org](http://www.arso-oran.org/arso@arso-oran.org)

Web: [www.arso-oran.org](http://www.arso-oran.org)

|  |
| --- |
| **Copyright notice**  This ARSO document is copyright-protected by ARSO. While the reproduction of this document by participants in the ARSO standards development process is permitted without prior permission from ARSO, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from ARSO.  Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to ARSO’s member body in the country of the requester:  © African Organisation for Standardisation 2024 — All rights reserved  ARSO Central Secretariat  International House 3rd Floor  P.O. Box 57363 — 00200 City Square  NAIROBI, KENYA  Tel: +254-20-2224561, +254-20-3311641, +254-20-3311608  E-mail: [arso@arso-oran.org](http://www.arso-oran.org/arso@arso-oran.org)  Web: [www.arso-oran.org](http://www.arso-oran.org)  Reproduction for sales purposes may be subject to royalty payments or a licensing agreement. Violators may be prosecuted. |

## AFRICAN STANDARD

**Tapioca pearls — Specification**

# 1 Scope

This Draft African Standard specifies requirements, sampling and test methods for tapioca pearls intended for human consumption.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

*AOAC 943.02-1943, PH of flour. Potentiometric method*

ARS 53*, General principles of food Hygiene — Code of practice*

ISO 874. *Fresh fruits and vegetables - Sampling*

ARS 844, [*Cassava and cassava products — Determination of total cyanogens — Enzymatic assay*](http://onlinecatalogue.kebs.org/webquery.dll?v1=pbMarc&v4=0&v5=5A&v8=878808&v9=0&v10=N&v13=4A&v20=4&v23=0&v25=744&v27=2029&v29=5A&v35=%7b%5d0%5b%7d%7b%5d0%5b%7d%7b%5d0%5b%7d%7b%5d0%5b%7d&v40=878806&v46=878808)[*method.*](http://onlinecatalogue.kebs.org/webquery.dll?v1=pbMarc&v4=0&v5=5A&v8=878808&v9=0&v10=N&v13=4A&v20=4&v23=0&v25=744&v27=2029&v29=5A&v35=%7b%5d0%5b%7d%7b%5d0%5b%7d%7b%5d0%5b%7d%7b%5d0%5b%7d&v40=878806&v46=878808)

ISO 10520, *Native starch - Determination of starch content - Ewers polarimetric method*

ISO 1666, *Starch - Determination of moisture content - Oven-drying method*

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

US ISO 20483, *Cereals and pulses - Determination of the nitrogen content and calculation of the crude protein content - Kjeldahl method*

ISO 5985, *Animal feeding stuffs - Determination of ash insoluble in hydrochloric acid*

ISO 5379, *Starches and derived products - Determination of sulphur dioxide content - Acidi-metric method and nephelometric method*

ISO 5520, *Fruits, vegetables and derived products — Determination of alkalinity of total ash and of water- soluble ash*

ISO 14864:1998, *Rice — Evaluation of gelatinization time of kernels during cooking*

ISO 24333, *Cereals and cereal products — Sampling*

**3 Terms and definitions**

For the purpose of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

**3.1**

**tapioca**

granulated product made from gelatinized cassava starch

**3.2**

**tapioca pearls**

small, hard, clean, wholesome globules of uniform colour, shape and size made from the starch obtained from the tuberous roots of manihot plant commonly known as cassava or tapioca

**4 Grades**

Tapioca pearls shall be of the following three grades;

1. Special;
2. Standard; and
3. General

**5 Requirements**

**5.1 General requirements**

**5.1.1** Tapioca pearls shall be [pearl white] in colour having characteristic taste and flavour. It shall be free from

1. fermented or musty or any other objectionable odours;
2. added sweetening or colouring matters; and
3. adulterants, insect infestation, live and dead insects, mould/mites/fungal contamination and larvae.

NOTE The appearance, taste and odour shall be determined by sensory analysis tests as agreed to between the manufacturer and purchaser.

**5.1.2** Tapioca pearls when examined by the method prescribed in ARS 53 shall be free from dirt, or other suspended and extraneous matter (any foreign matter in product including filth, sand and soil, glass etc.).

**5.2 Specific requirements**

5.2.1 Tapioca pearls shall comply with the specific requirements given in Table 1 when tested in accordance with test methods specified therein.

Table 1 — Specific requirements for tapioca pearls

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/N** | **Characteristic** | **Requirement** | | | **Test method** |
| **Special** | **Standard** | **General** |
|  | Moisture, percent by mass, max. | 11.0 | 11.0 | 12.0 | ISO 1666 |
|  | Acid insoluble ash (dry basis), percent by mass, max. | 0.10 | 0.10 | 0.10 | ISO 5985 |
|  | Starch (dry basis), percent by mass, Min | 98.0 | 98.0 | 96.0 | ISO 10520 |
|  | Sulphur dioxide, ppm, max. | 100 | 100 | 100 | ISO 5379 |
|  | Crude fibre (on dry basis), percent by mass, max. | 0.15 | 0.20 | 0.20 | ISO 5498 |
|  | pH of aqueous extract | 4.5 to 7.0 | 4.5 to 7.0 | 4.5 to 7.0 | AOAC 943.02 |
|  | Colour of gelatinized alkaline paste in the porcelain cuvette on the Lovibond Scale, not deeper than | 0.2 R + 1.0 Y | 0.3 R + 1.0 Y | 0.4 R + 1.5 Y |  |
|  | Hydrocyanic acid, mg/kg, max. | 5 | 5 | 10 | ARS 844 |

**5.2.3 Gelatinization**

When cooked and tested by the method prescribed in ISO 14864, the quantity of starch passed into the gruel shall not exceed 30 percent by mass of the matter taken for the test, and the individual globules or pearls shall retain the globular shape.

**6 Food additives**

Food additives when used shall contain permitted additives complying with CXS 192.

**7 Hygiene**

Dried Tapioca pearls shall be produced and handled in accordance with ARS 53.

**8 Contaminants**

**8.1 Pesticide residues**

The pesticide residues pesticide residues, if any, in the product shall not exceed the limits as prescribed in the Codex Alimentarius Commission.

**8.2 Other contaminants**

Tapioca pearls shall comply with the maximum levels of contaminants given in CXS 193.

**9 Packaging**

Tapioca pearls shall be packaged in food grade materials that will safeguard the hygienic, nutritional and organoleptic qualities of the product. Each package shall be securely closed and sealed.

**10 Labelling**

The following specific labelling requirements shall apply and shall be legibly and indelibly marked in accordance with the requirements of ARS 56;

1. name and grade of the product;
2. name, and physical address of the manufacturer;
3. country of origin;
4. date of manufacture;
5. best before date;
6. storage conditions;
7. batch or lot number; and
8. net weight in metric units.

**11 Sampling**

Sampling of tapioca pearls shall be done in accordance with ISO 874.

1. \* © 2024 ARSO — All rights of exploitation reserved worldwide for African Member States’ NSBs. [↑](#footnote-ref-1)