



DEAS 746:2010
ICS 67.080.20

EAST AFRICAN STANDARD

Frozen potato chips — Specification

EAST AFRICAN COMMUNITY

Draft for comments only — Not to be cited as East African Standard

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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ASARECA is a non-political association of agricultural research institutes in: Burundi, DR Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. ASARECA serves as a platform for promoting regional research and in the sharing of benefits and spillovers that derive from such research. The mission of ASARECA is to “*Enhance regional collective action in agricultural research for development, extension and agricultural training and education, to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in Eastern and Central Africa*”.

Development of standards has been part of PAAP’s contribution to changing the way business is done in crucial agricultural sectors to increase efficiency and/or reduce waste through rationalization and harmonization of policies, laws, regulations and procedures. Rationalization focuses on how countries conduct business in a given subsector, and determines what should be done to make the procedures and processes more efficient. Harmonization brings together regionally different approaches (policies, laws, regulations and procedures) into unified approaches that are applied across the countries. This harmonization process allows commodities and factors to move freely across national boundaries, thereby improving domestic and foreign investment by expanding markets beyond national borders. Over time this will lead to gradual attainment of seamless borders for trade in cassava and cassava products across the region.

Removal of regulatory bottlenecks to transboundary movement of cassava products in the region will enhance competitiveness of trade and value addition in the sub-sector. It will improve the value chains by supporting product differentiation and hence increased trade in cassava products in the region. This will ultimately contribute to incomes, employment generation and improved welfare in the region. This fits snugly with the aspirations of ASARECA as a key player contributing to economic development of the region.

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Cassava crisps — Specification

1 Scope

This draft East African Standard specifies the requirements and methods of sampling and test for frozen potato (*Solanum tuberosum* L.) chips to be supplied packaged either in retail packs or in bulk for human consumption.

2 Normative references

The following referenced documents are indispensable for the application 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.

EAS 38, *General standard for labeling of prepackaged foods*

EAS 39, *Code of practice for hygiene in the food and drink manufacturing industry*

EAS 103, *General standard for food additives*

EAS 321, *Edible oils and fats — Specification*

EAS 35, *Specification for edible (fortified) salt*

DEAS 748, *Fresh potatoes — Specification*

EAS 98, *Spices and condiments — Specification*

CAC/RCP 67, *Code of Practice for reduction of acryl amide in foods*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions shall apply.

3.1

frozen potato chips

product prepared from washed, mature, sound tubers of the potato plant of the species and subjected to a freezing process in the appropriate equipment.

3.2

presentation styles:

3.2.1

straight cut

strips of potato with practically parallel sides and with smooth surfaces

3.2.2

crinkle cut

strips of potato with practically parallel sides and in which two or more sides have a corrugated surface

3.3

external defects

blemishes or discolourations (either internally or on the surface) due to exposure to light, mechanical, pathological or pest agents, eye material or peeling remnants

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3.3.1

minor defect

unit affected by disease, dark or intense discolouration, eye material, or dark peel covering an area or a circle greater than 3 mm but less than 7 mm in diameter; pale brown peel or light discolouration of any area greater than 3 mm in diameter

3.3.2

major defect

unit affected by disease, dark or intense discolouration, eye material, or dark peeling covering an area or a circle greater than 7 mm but less than 12 mm in diameter

3.3.3

serious defect

unit affected by disease, dark or intense discolouration, eye material, or dark peel covering an area or a circle of 12 mm in diameter or more

3.3.4

slight defect

defects which in either area or intensity fall below the definition shown for minor defects

3.4

sorting defects

3.4.1

sliver

very thin unit (generally an edge piece) which will pass through a slot the width of which is upto 50 % of the minimum dimension of the nominal or normal size

3.4.2

small piece

any unit less than 25 mm in length

3.4.3

scrap

potato material of irregular form not conforming to the general conformation of frozen potato chips

3.5

burnt pieces(frying and blanching defects)

any unit which is dark brown and hard due to inappropriate blanching and over-frying

3.6

Practically free

product without defects in excess of those that can be expected to result from, and be consistent with good cultural and handling practices employed in the production and marketing of the frozen potato chips

4. Process requirements

4.1 Preparation and freezing process

Potato tubers for making frozen chips shall be sorted, washed, peeled, cut into strips, and treated as necessary to achieve satisfactory colour and ensure adequate stability of colour and flavour during normal marketing cycles.

The treatment may include blanching or deep frying in a suitable fat or oil and which may include the addition of any ingredient permissible in accordance with EAS 103

The prepared product shall be frozen and stored at temperatures necessary for its preservation.

The freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached - 18 °C at the thermal centre after thermal stabilization. The practice of repacking frozen potato chips under controlled conditions may be undertaken.

4.2 Handling practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale in accordance to EAS 39 and CAC/RCP 53.

5 Presentation styles

5.1 General

The product shall be presented in one of the following styles:

- straight cut; and
- crinkle cut.

5.2 Cross sectional dimensions

The cross sectional dimensions of strips of frozen potato chips which have been cut on all four sides shall not be less than 5 mm when measured in the frozen condition. The frozen potato chips within each pack shall be of similar cross sections.

5.3 The product designations shall comply with the requirements stipulated in Table 1.

Table 1 — Designations for the dimensions across the largest cut surface

Designation	Dimension across the largest cut surface, mm
Shoestring	5 – 8
Medium	8 – 12
Thick cut	12 – 16
Extra large	> 16

5.4 Other styles

Frozen potato chips may be presented with any other presentations based on differing cross sections provided that it

- a) is sufficiently distinctive from other forms of presentation laid down in this standard,
- b) meets all other requirements of this standard, and
- c) is adequately described on the label to avoid confusing or misleading the consumer.

6 Compositional and quality requirements

6.1 Ingredients

6.1.1 Basic ingredients

These shall include the following:

- a) potatoes conforming to DEAS 748 and
- b) edible fats and oils conforming to EAS 321 if fried.

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6.1.2 Optional ingredients

These shall include the following:

- a) sugars (sucrose, invert sugar, dextrose, fructose, glucose syrup, dried glucose syrup) conforming to national standards;
- b) salt (sodium chloride), conforming to EAS 35; and
- c) spices and condiments, conforming to EAS 98.

6.2 General quality requirements

Frozen potato chips shall:

- a) be free from any foreign flavours and odours;
- b) be clean, sound and practically free from foreign matter; and
- c) have a reasonably uniform colour;
- d) have a texture characteristic of the product.

6.3 Moisture content

The maximum moisture content of the whole product in the styles and size designations when determined in accordance with Annex A shall conform to the limits in Table 2.

Table 2 — Limits for moisture content in frozen potato chips

Style	Size designation	Moisture content
Straight cut	Shoestring, medium, thick cut	76
	Large cut	78
Crinkle cut	Shoestring, medium, thick cut	76
	Large cut	78
Other styles	—	78

6.4 Free fatty acid content

For fried frozen potato chips, the fat or oil extracted from the product shall have a free fatty acid content of not more than 1.5 % m/m measured as oleic acid or an equivalent fatty acid value based on the predominant fatty acid in the fat or oil. The test for free fatty acids shall be done in accordance with Annex B.

6.5 Defects

Frozen potato chips shall meet the following requirements with respect to visual defects subject to a tolerance in 6.6:

- a) be without excessive defects such as blemishes, eyes and discolouration;
- b) be without excessive sorting defects, such as slivers, small pieces and scrap; and
- c) be reasonably free from frying defects, such as brown parts .

6.6 Tolerances for visual defects

Tolerances on defects shall be determined based on the standard sample size of 1 kg (see clause 13). The visual external defects shall be classified as "minor" or "major" or "serious" depending on the

cross section of the frozen potato chips. The standard samples shall not contain units in excess of the numbers shown for the respective categories, including total, in Table 3.

Table 3 — Tolerances for external defects

Cross section of strips	Number of units affected		
	Serious	Serious +major	Serious + major + minor
5 - 16 mm	7	21	60
Over 16 mm	3	9	27

The tolerances for the other defects (not depending on cross section) shall not exceed the following limits:

- slivers max. 12 % m/m;
- small pieces and scraps max. 6 % m/m;
- total sorting defects max. 12 % m/m; and
- frying defects max. 0.5 % m/m.

7 Food additives

Food additives may be used in accordance with EAS 103.

8 Contaminants

8.1 Pesticide residues

Frozen potato chips shall conform to the maximum residue limits for pesticide residues recommended by Codex Alimentarius Commission.

8.2 Other contaminants

Frozen potato chips roots shall comply with the maximum levels of the Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193).

9 Hygiene

Frozen potato chips shall be prepared, packaged and stored under hygienic conditions in accordance with EAS 39; the frozen chips shall conform to the microbiological limits in Table 4

Table 4— Microbiological requirements for potato crisps

Micro-organism(s)	Maximum limit	Method of test
Total viable count, CFU per gram, max	10 ⁴	EAS ISO
<i>Escherichia coli</i> , CFU per gram	Shall be absent	ISO 7251 ISO 4833;
<i>Salmonella</i>	Shall be absent	ISO 6579
Yeasts and moulds, CFU per gram	10 ³	EAS ISO ISO 21527 -2

10 Packaging

Frozen potato chips shall be packaged in food grade material which will safeguard the hygienic, nutritional, and organoleptic qualities of the product. The material shall be moisture and air proof, oil proof and well sealed to prevent spoilage or contamination.

11 Weights and Measures

Frozen potato chips shall be packaged in accordance with Weights and Measures requirements of the destination country.

12 Labelling

In addition to the requirements of EAS 38, the following specific labelling requirements shall apply and shall be **legibly** and **indelibly** marked;

- a) name of the food:
 - i) the name of the food as declared on the label shall include the designation "Frozen potato chips" or the equivalent designation used in the country in which the product is intended to be sold;
 - ii) in addition, there shall appear on the label a designation of the style as appropriate, that is "straight cut" or "crinkle cut" and there may also appear an indication of the approximate dimensions of the cross section or the appropriate designation, that is "shoestring", "medium", "thick cut" or "extra large";
 - iii) if the product is presented in styles not listed in this standard, the label shall contain in close proximity to the words "Frozen potato chips" such additional words or phrases that will avoid misleading or confusing the consumer; and
 - iv) the words "Frozen" shall also appear on the label, except that the term "quick Frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance this standard. In addition, any pre-freezing treatment applied on the product shall be indicated;
 - v) A process description as blanched, par-fried or fully fried;
- b) packages shall bear clear directions for keeping from the time they are purchased from the retailer to the time of their use, as well as directions for cooking; and
- c) in the case of frozen potato chips in bulk, the information required above shall either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "frozen" (the term "quick frozen" may be used in accordance with (a) (iv); and
- d) name and physical address of the manufacturer or packer and or brand/trade names
- e) Best before date
- f) Declaration of spices and condiments used.

13 Sampling

The standard sample size shall be one kilogramme.

14 Criteria for conformity

A lot shall be declared as conforming to this standard if each sample inspected or analysed for quality requirement conforms to the provision of this standard

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