



## **DRAFT EAST AFRICAN STANDARD**

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### **Breakfast Cereals -Specification**

**EAST AFRICAN COMMUNITY**

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## Foreword

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

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

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.

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.

## Introduction

Breakfast cereal foods can be classified based on either the amount of time required for domestic cooking, the form of the breakfast cereal or the cereal used as a raw material.

The types that require no cooking are called ready-to-eat cereals and these are available in a variety of forms. These ready-to-eat cereals are usually consumed with milk or water and with or without added sugar.

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# Breakfast Cereals — Specification

## 1. Scope

This draft East African Standard specifies the requirements, sampling and test methods for breakfast cereals intended 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.

*AOAC 999.11, Determination of Lead, Cadmium, Copper, Iron, and Zinc in Foods, Atomic Absorption Spectrophotometry after Dry Ashing*

*CXS 193, General standards for contaminants and toxins in food and feed*

*EAS 805 Guidelines for nutrition and health claims.*

*EAS 38, Labelling of pre-packaged foods — Specification*

*EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice;*

*EAS 900, Cereals and pulses — Sampling*

*EAS 901, Cereals and pulses — Test methods*

*ISO 6579-1 Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.*

*ISO 21527-2, Microbiology of food and animal feedstuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

*ISO 16050 Foodstuffs - Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products - High-performance liquid chromatographic method*

*ISO 16649-2 Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

*ISO 7305 Milled cereal products — Determination of fat acidity*

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

### 3.0 Terms and definitions

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

#### 3.1

##### **flaked breakfast cereals**

ready to eat breakfast cereals made by pressing cooked whole grain kernel or part of kernel or the grain grits through rollers or by extrusion.

#### 3.2

##### **puffed breakfast cereals**

ready to eat cereals made by exploding cooked grains from a pressurized chamber.

#### 3.3

##### **cereal bar**

ready to eat breakfast cereal made of a mixture of different cereal grains which are either flaked or puffed with optional additional ingredients such as dried fruits, nuts, seeds and may be coated with products like chocolates or any to other suitable food coating.

#### 3.4

##### **muesli**

loose mixture of rolled cereal grains and other ingredients including dried fruits nuts and seeds.

#### 3.5

##### **food grade packaging material**

packaging material, made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

#### 3.6

##### **extruded flaked cereals**

ready-to-eat cereal flakes where the grit for flaking is formed by extruding mixed ingredients through a die and cutting pellets of the dough into the desired size

#### 3.7

##### **gun-puffed whole grains**

ready-to-eat cereal flakes formed by cooking the grains and then subjecting them to a sudden large pressure drop. As steam under pressure in the interior of the grain seeks to equilibrate with the surrounding lower- pressure atmosphere, it forces the grains to expand quickly or "puff."

#### 3.8

##### **extruded gun-puffed**

ready-to-eat cereal flakes that use a meal or flour as the starting ingredient instead of whole grains. The dough cooks in the extruders and is then formed into the desired shape when extruded through a die

#### 3.9

##### **oven-puffed cereals**

ready-to-eat cereal flakes made almost exclusively using whole-grain rice or corn, or mixtures of these two grains, because rice and corn inherently puff in the presence of high heat and the proper moisture content

#### 3.10

### **shredded whole grains**

ready-to-eat cereal flakes which are continuously produced by pelletizing agglomerates of cooked, tempered, whole cereal grain particles

### **3.11**

#### **extruded shredded cereals**

ready-to-eat cereal flakes where the grit for flaking is formed by extruding mixed ingredients through a die and cutting pellets of the dough into the desired size

### **3.12**

**granola cereals (cereal mixes)** ready-to-eat cereals that are prepared by taking regular, old-fashioned whole-rolled oats or quick-cooking oats and mixing them with other ingredients, such as nut pieces, coconut, brown sugar, honey, malt extract, dried milk, dried fruits, water, cinnamon, nutmeg and vegetable oil.

## **4 Product descriptions**

Breakfast cereals are categorized as

a) traditional cereals that require further cooking or heating before consumption; examples may include but not be limited to products from oats, farina (wheat), rice, corn (excluding corn grits); and

b) ready-to-eat cereals that can be consumed from the package or with the addition of milk. They are typically grouped by cereal form rather than the type of grain used. These groups include flaked cereals, extruded flaked cereals, gun-puffed whole grains, extruded gun-puffed cereals, oven-puffed cereals, shredded whole grains, extruded shredded cereals, cereal bar and granola cereals.

## **5. Requirements**

### **5.1 Ingredients**

The following ingredients complying to relevant standards shall be used in the processing of breakfast cereal but not limited to the following;

#### **5.1.1 Essential ingredients**

Cereals grains and derived products

#### **5.1.2 Optional ingredients**

In addition to the essential ingredients specified under 4.2.1, any of the following ingredients may be used in the manufacturer of breakfast cereals in singly or in combination:

- (a) sugar or sweetening agents
- (b) dried fruits
- (c) salt
- (d) Nuts and oilseeds
- (e) edible fats and oil
- (f) micronutrients

### **5.2 General requirements**

Breakfast cereal shall be

- (a) Tender, crispy, and reasonably uniform in size and of characteristic flavour and colour.

- (b) Free from sogginess and dampness
- (c) Free from rancid, musty, sour and other undesirable tastes.
- (d) Free from insects and foreign matters.
- (e) fit for consumption as per the serving suggestion

### 5.3 Specific requirements

Breakfast cereals shall comply with the requirements given in Tables 1 when tested in accordance to the test methods specified therein.

**Table 1 — Specific requirements for breakfast cereals**

S/N	Parameter	Limits		Test method
1	Moisture (max) % m/m	Muesli and oats	12	EAS 901 Clause 5
		Others	7.5	
		Cereal bars	14	
2	Fat Acidity,(mg NaOH/ 100g)	4 [80]		ISO 7305
3	Acid Insoluble Ash Max% m/m	0.2		ISO 5985

### 6. Food additives

Food additives may be used in the making of breakfast cereals and shall comply with CXS 192

### 7. Hygiene

7.1 Breakfast cereals shall be prepared and handled in accordance with EAS 39.

7.2 Breakfast cereals shall comply with the limits for microorganism stipulated in Table 2 when tested to the test methods specified therein.

**Table 2 — Microbiological limits for breakfast cereals**

S/N	Parameter	Limits	Test method
2	<i>Salmonella sp.</i> 25g	absent	ISO 6579-1
3	<i>Escherichia coli</i> cfu/g	absent	ISO 16649-2
4	<i>Staphylococcus aureus</i> /25 g	absent	ISO 6888
5	Yeast and moulds cfu/g, max	< 50 [10 <sup>2</sup> ]	ISO 21527-2

### 8. Contaminants



### 8.1 Heavy metals

Breakfast cereals shall comply with the heavy metals limits as stipulated in Table 3

**Table 3 — Heavy metal contaminants limits**

S/N	Heavy metals	Limits (max) in ppm	Test method
i	Arsenic (As),	0.1	AOAC 999.11
ii	Lead (Pb),	0.2	
iii	Cadmium (Cd)	0.1	

### 8.2 Mycotoxin

Breakfast cereals shall comply with the maximum limits for mycotoxins given in Table 4 when tested in accordance with the test methods prescribed therein.

**Table 4 — Mycotoxin limits for breakfast cereals**

S/N	Mycotoxin	limit (max)	Test method
i.	Total aflatoxins µg/kg	10	EAS 901
ii.	Aflatoxin B <sub>1</sub> , µg/kg	5	Clause 9

### 8.3 Other contaminants

Ingredients used to make breakfast cereals as well as final product shall conform to those maximum levels as per Codex Stan 193

## 9. Packaging

Breakfast cereals shall be packaged in food grade packaging material which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the products.

## 10. Labelling

**10.1** The following specific labelling requirements shall apply and shall be legibly and indelibly marked in accordance with the requirements of EAS 38.

- a) product name as “breakfast cereals’ reflecting the true nature of the product
- b) the cereal used for preparation of the breakfast cereal shall be declared before the product name.
- c) name, address and physical location of the producer/packer/importer;
- d) Brand name/ trade name;
- e) Country of origin
- f) lot/batch/code number;
- g) net weight, in metric units;
- h) date of manufacture;
- i) Expiry date
- j) storage condition;
- k) instructions for use;
- l) declaration of genetic modified organism (GMO), if applicable.

### 10.2 Labelling of non-retail containers

Information detailed in 9.1 shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the processor or packer as well as storage instructions, shall appear on the container. However, lot identification and the name and address of the processor or packer may be replaced by an identification mark provided that such a mark is clearly identifiable with the accompanying documents.

**10.3** The use of pictorials, which misrepresent the true nature of the product on the label, is prohibited.

### 10.4 Nutrition and Health claims

Nutritional labelling, nutrition and health claims may be made in accordance with EAS 803, EAS 804 and EAS 805

## 11 sampling

Sampling shall be done in accordance with EAS 900

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