



## **DRAFT EAST AFRICAN STANDARD**

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### **Wheat semolina — 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.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. 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 Principles and procedures for development of East African Standards.

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.

The committee responsible for this document is Technical Committee EAS/TC 014, *Cereals, pulses and related products*.

This second edition cancels and replaces the first edition (EAS 282: 2002), which has been technically revised.

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



## Wheat semolina — Specification

### 1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for wheat semolina prepared from common wheat (*Triticum aestivum* L.) or club wheat (*Triticum compactum* Host.) mixtures thereof, or to mixtures of these wheats in combination with durum wheat (*Triticum durum* Desf.) and durum wheat semolina prepared from durum wheat (*Triticum durum* Desf.), intended for human consumption.

This standard does not apply to wheat semolina for non-food industrial or animal feed use.

### 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.

CXG 9, *General principles for the addition of essential nutrients to foods*

CXS 192, *General standard for food additives*

CXS 199, *Standard for wheat and durum wheat*

EAS 39, *General principles of food hygiene — Code of practice*

EAS 51, *Wheat grains — Specification*

EAS 900, *Cereal, pulses and their products — Sampling*

EAS 901, *Cereal and pulses — Test methods*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 °C by the pour plate technique*

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 6888-1, *Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Method using Baird-Parker agar medium*

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 21527-2, *Microbiology of food and animal feeding stuffs — 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*

### 3 Terms and definitions

For the purposes 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>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1

##### **filth**

impurities of animal origin, (including dead insects)

#### 3.2

##### **food grade packaging materials**

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

#### 3.3

##### **durum wheat semolina**

product prepared from grains of durum (*Triticum durum* Desf.) wheat by grinding or milling process in which the bran and the germ are essentially removed and the remainder portion is comminuted to as suitable degree of fineness.

#### 3.4

##### **whole durum wheat semolina**

product prepared from grains of durum wheat (*Triticum durum* Desf.) by grinding or milling in which the bran and the germ are retained

#### 3.5

##### **wheat semolina**

product prepared from grains of common wheat (*Triticum aestivum* L.), or club wheat, (*Triticum compactum* Host.) or mixtures thereof, by grinding or milling process in which the bran and the germ are essentially removed and the remainder portion is comminuted to a suitable degree of fineness

#### 3.6

##### **whole wheat semolina**

product prepared from grains of common wheat (*Triticum aestivum* L.) or club wheat (*Triticum compactum* Host.) or mixtures thereof, by grinding or milling process in which the bran and the germ are retained

### 4 Requirements

#### 4.1 Raw material

Wheat semolina obtained from dried mature grains of *Triticum durum* Desf. complying with CXS 199 and from dried mature grains of *Triticum aestivum* and *Triticum compactum* complying with EAS 51.

#### 4.2 General requirements

##### 4.2.1 Wheat semolina shall:

- a) be clean, safe, suitable and of good quality;
- b) have a characteristic colour, smell and taste;

- c) be free from musty or off odour, insect or fungal infestation, rodent contamination, dirt and other extraneous matter; and
- d) be free from living insects, worms, filth, and foreign matter.

**4.2.2** The appearance, taste and odour shall be determined by organoleptic testing.

### 4.3 Nutrients

Nutrients, if used, shall comply with CXG 9.

### 4.4 Specific requirements

Wheat semolina shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

**Table 1 — Specific requirements for wheat semolina**

S/N	Characteristic	Durum wheat semolina	Wheat semolina	Wholedurum wheat semolina	Whole wheat semolina	Test method
i.	Moisture content, % by mass, max.	14.5				EAS 901
ii.	Acid insoluble ash (on dry basis) % by mass,max.	0.15		0.2		
iii.	Fatty acidity (KOH), max.	80		-	-	
iv.	Protein (on dry basis), % by mass, min.	10.5		11.5		
v.	Gluten (on dry basis), % by weight, max.	6.0				Annex B
vi.	Crude fibre content, % m/m, max.	1.5		2.0		EAS 901
vii.	Particle size, pass through a 315-µm sieve, %, m/m, max.	79				Annex A

## 5 Food additives

Wheat semolina may contain only the permitted food additives specified in CXS 192.

## 6 Hygiene

**6.1** Wheat semolina shall be prepared and handled in accordance with EAS 39.

**6.2** Wheat semolina shall comply with microbiological limits given in Table 2 when tested in accordance with the test methods specified therein.



**Table 2 —Microbiological limits for wheat semolina**

S/N	Microorganism	Limit	Test method
i.	Total aerobic cfu/ g, max.	10 <sup>5</sup>	ISO 4833-1
ii.	Yeasts and moulds, cfu/g, max.	10 <sup>4</sup>	ISO 21527-2
iii.	<i>Escherichia coli</i> cfu/g	<1	ISO 16649-2
iv.	<i>Salmonella</i> spp in 25 g	Absent	ISO 6579-1
v.	<i>Staphylococcus aureus</i> , cfu/g	10 <sup>2</sup>	ISO 6888-1

## **7 Contaminants**

### **7.1 Pesticide residues**

Wheat semolina shall comply with pesticide residue levels established by the Codex Alimentarius Commission for this commodity.

### **7.2 Heavy metals**

Wheat semolina shall comply with the heavy metals levels given in CXS 193.

### **7.3 Mycotoxins**

Wheat semolina shall comply with the mycotoxins levels given in CXS 193.

## **8 Packaging**

**8.1** Wheat semolina shall be packaged in food grade packaging material which will safe guard the hygienic, nutritional and organoleptic qualities of the product.

**8.2** Each package shall be securely closed and sealed.

## **9 Labelling**

In addition to the requirements given in EAS 38, each package shall be legibly and indelibly labelled with the following:

- a) name of the product as "Wheat semolina" and/or "Durum wheat semolina";
- b) name and address of manufacturer;
- c) batch or code number;
- d) net mass in metric units;
- e) expiry date (Best before);
- f) country of origin;

- g) the statement “Food for human consumption”;
- h) the statement “Store in cool, dry place”;
- i) declaration on whether the wheat semolina were genetically modified or not;
- j) the statement “Use no hooks” where applicable; and
- k) declaration on the presence of gluten.

## **10 Sampling**

Sampling shall be done in accordance with EAS 900.

## **Annex A**

(normative)

### **Determination of particle size**

#### **A.1 Apparatus**

##### **Sieves**

#### **A.2 Procedure**

Make a nest of 2 sieves, the upper having a designation of 1.18 mm and the lower 315- $\mu\text{m}$  sieve, with a cover on top of the upper sieve and a receiver below the lower sieve.

## Annex B (normative)

### Determination of gluten

#### B.1 Procedure

**B.1.1** Preparation of material — Grind about 100 g of the material in a mortar and pestle or in a suitable mechanical pulverizer. Sieve through a fine treble extra silk with an aperture of 0.16 mm and collect the material that has passed through. Use this preparation for the determination of gluten.

**B.1.2** Weigh accurately into a dish about 25 g of the material. Add about 156 ml of water to the material and make it into a dough, taking care to see that all the material is taken into the dough. Keep the dough gently in a beaker filled with water and let it stand for one hour. Remove the dough and place it in a piece of bolting silk cloth with an aperture of 0.16 mm size, and wash it with a stream of tap water till water passing through the silk does not turn blue when a drop of iodine solution is added to it. Spread the silk tight on a porcelain plate to facilitate scrapping. Transfer the residue from the silk by means of a spatula, to a tared porcelain dish. Spread the wet gluten into a thin layer and out into small pieces. Transfer any sticking to the spatula into the porcelain dish. Place the porcelain dish in an air-oven maintained at  $135^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . Dry for two hours, cool in a desiccator and weigh.

#### B.2 Calculation

The gluten content, expressed as percent (%) by weight, shall be calculated using the formula below:

$$10\,000 \frac{W_2 - W_1}{W(100 - M)}$$

where

$W_2$  is the weight, in grams, of the dish with dry gluten;

$W_1$  is the weight in grams, of the empty dish;

$W$  is the weight in grams, of the material taken;

$M$  is the percentage of the moisture in the sample.

## Bibliography

EAS 282: 2002, *Wheat semolina — Specification*

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