



DEAS 95:2026

ICS 67.060

## DRAFT EAST AFRICAN STANDARD

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Sorghum flour — 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.

EAS 95 was prepared by Technical Committee EASC/ TC 014, *Cereals, pulses and related products*.

This fourth edition cancels and replaces the third edition (EAS 95:2017), which has been technically revised.



# Sorghum flour — Specification

## 1 Scope

This draft East African Standard specifies requirements, sampling and test methods for sorghum flour obtained from decorticated sorghum grains (*Sorghum bicolor* (L) Moench.) intended for human consumption.

It does not apply to grits or meal obtained from sorghum.

## 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 952.13, *Arsenic in food — Silver diethyldithiocarbamate*

CODEX STAN 192, *General standard for food additives*

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

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

EAS 757, *Sorghum grains — Specification*

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

EAS 901, *Cereals pulses and their products — Test methods*

ISO 2171, *Cereals, pulses and by-products — Determination of ash yield by incineration*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

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

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

ISO 6561-1, *Fruits, vegetables and derived products — Determination of cadmium content — Part 1 — Method using graphite furnace atomic absorption spectrometry*

ISO 6561-2, *Fruits, vegetables and derived products — Determination of cadmium content — Part 2 — Method using flame atomic absorption spectrometry*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6633, *Fruits, vegetables and derived products — Determination of lead content — Flameless atomic absorption spectrometric method*

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

ISO 7954, *Microbiology — General guidance for enumeration of yeasts and moulds — Colony count technique at 25 °C*

ISO 9648, *Sorghum — Determination of tannin content*

ISO 11085, *Cereals, cereals-based products and animal feeding stuffs — Determination of crude fat and total fat content by the Randall extraction method*

ISO 16649-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of  $\beta$ -glucuronidase-positive Escherichia coli — Part 1: Colony-count technique at 44 °C using membranes and 5-bromo-4-chloro-3-indolyl  $\beta$ -D-glucuronide*

### **3 Terms and definitions**

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

#### **3.1 sorghum flour**

product obtained from sorghum grains (*Sorghum bicolor* (L.) Moench) through a process of milling

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

materials which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the product

#### **3.3 filth**

impurities of animal origin including dead insects

### **4 Quality requirements**

#### **4.1 General requirements**

**4.1.1** The sorghum from which the flour is obtained shall comply with EAS 757.

**4.1.2** Sorghum flour shall be:

- a) safe and suitable for human consumption;
- b) of characteristic flavour and odour;
- c) free from parasite and living insects; and
- d) free from filth.

#### **4.2 Specific requirements**

Sorghum flour shall comply with the limits given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for sorghum flour

S/No.	Characteristic	Limit	Test method
i.	Moisture content, % m/m, max.	13.5	EAS 901 (Clause 5)
ii.	Ash, %, max.	1.5	ISO 2171
iii.	Acid insoluble ash, %, max.	0.40	ISO 5985
iv.	Crude fat, %, max.	4.7	ISO 11085
v.	Crude fibre, %, max.	2.5	ISO 5498
vi.	Tannin content, % m/m, max.	0.3	ISO 9648
vii.	Particle size: <ul style="list-style-type: none"> <li>• Medium flour, min</li> <li>• Fine flour, min.</li> </ul>	85 % shall pass through a 1-mm sieve  85 % shall pass through a 0.5-mm sieve	EAS 901 (Clause 4)

## 5 Food additives

Sorghum flour may contain only the permitted food additives specified in the CODEX STAN 192.

## 6 Hygiene

6.1 Sorghum flour shall be prepared and handled in accordance with EAS 39.

6.2 The product shall comply with the microbiological limits given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Microbiological limits for sorghum flour

S/No.	Micro-organism	Maximum limit	Test method
i.	<i>Escherichia coli</i> per 1 g	Absent	ISO 16649-2
ii.	<i>Salmonella</i> per 25 g	Absent	ISO 6579
iii.	Yeast and moulds cfu/g, max.	10 <sup>4</sup>	ISO 7954
iv.	<i>Staphylococcus aureus</i> cfu/g, max.	10 <sup>2</sup>	ISO 6888-1

## 7 Contaminants

## 7.1 Heavy metals

Sorghum flour shall comply with those limits for heavy metals established by the Codex Alimentarius Commission given in Table 3 when tested in accordance with the test methods specified therein.

**Table 3 — Heavy metals limits for sorghum flour**

S/No.	Heavy metal	Maximum limit mg/kg	Test method
i.	Lead (Pb)	0.2	ISO 6633
ii.	Cadmium (Cd)	0.1	ISO 6561-1/2

## 7.2 Pesticide residues

Sorghum flour shall comply with those residue limits established by the Codex Alimentarius Commission for this commodity.

NOTE Where the use of certain pesticides is prohibited by some Partner States, it should be notified to all Partner States accordingly.

## 7.3 Mycotoxins

Sorghum flour shall comply with the mycotoxin limits established by the Codex Alimentarius Commission given in Table 4 when tested in accordance with the test methods specified therein.

**Table 4 — Mycotoxins limits for sorghum flour**

S/No.	Mycotoxin	Maximum limit µg/kg	Test method EAS 901
i.	Total aflatoxins	10	Clause 9 or 10
ii.	Aflatoxin B <sub>1</sub>	5	
iii.	Fumonisin	2 000	Clause 11 or 12

## 8 Weights and measures

Sorghum flour shall be packaged in accordance with the weights and measures regulations of the destination country.

NOTE EAC Partner States are signatory to the International Labour Organizations (ILO) for maximum package weight of 50 kg where human loading and offloading is involved.

## 9 Packaging

Sorghum flour shall be packaged in food grade packaging materials. When the product is packaged in sacks, these shall be clean, sturdy and strongly sewn or sealed.

## 10 Labelling

Labelling shall be done in accordance with EAS 38. At the minimum, the following information shall be displayed:

- a) product name as “Sorghum flour” and the terms “Fine” or “Medium”;
- b) name, address and physical location of the manufacturer/ packer/importer;
- c) lot/batch/code number;
- d) net weight, in kilograms;
- e) the declaration “Food for Human Consumption”;
- f) storage instruction as “Store in a cool dry place away from any contaminants”;
- g) date of manufacture;
- h) expiry date;
- i) instructions on disposal of used package; and
- j) country of origin.

## 11 Sampling

Sampling shall be done in accordance with EAS 900.

## Bibliography

CODEX STAN 173-1989 (Rev. 1 - 1995), *Codex Standard for sorghum flour*

EAS95:2017

DEAS 95:2026 for Public Review

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