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# **DRAFT EAST AFRICAN STANDARD**

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## **Fish 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.

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. XXXXXX.

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 EASC/TC 003, *Fish and fishily products*.

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Draft for Comments Only

## Fish flour— specification

### 1 Scope

This draft East African standard specifies requirements, sampling and test methods for fish flour, obtained from all types of fish 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 937.09, *Salt (chlorine as sodium chloride) in seafood.*

AOAC 972.23, *Lead in fish. Atomic absorption spectrophotometric method*

AOAC 2015.01, *Heavy Metals in Food - Inductively Coupled Plasma–Mass Spectrometry*

AOAC 977.13, *Histamine in Seafood. Fluorometric Method*

CXG 50, *General guidelines on sampling*

CXC 52, *Code of practice for fish and fishery products*

EAS 12, *Drinking (potable water) — Specification*

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

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

ISO 712, *Cereals and cereal products — Determination of moisture content — Reference method*

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

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 degrees 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 7305, *Milled cereal products — Determination of fat acidity*

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

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 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/TS 17919, *Microbiology of the food chain — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — Detection of botulinum type A, B, E and F neurotoxin-producing clostridia* RS ISO 20483, *Cereals and cereal products—Determination of the nitrogen content and calculation of the crude protein content —Kjeldahl method*

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

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.

#### **3.1**

##### **fish**

any shellfish, crustaceans and finfish suitable for human consumption

#### **3.2**

##### **fish flour**

flour obtained from drying and grinding of fish

#### **3.3**

##### **food grade container**

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

#### **3.4**

##### **sound**

free from physiological deterioration or adulteration/contamination, that appreciably affects appearance, edibility and the keeping quality of the fish flour

#### **3.5**

##### **foreign matter**

any material which is not of fish origin such as sand, stones, metallic chips and plant parts.

### **4 Raw materials**

**4.1** Fish flour shall be prepared from fresh, dried or precooked sound fish complying to respective EAS standard.

**4.2** Water used during fish processing shall be potable complying with EAS 12.

## 5 Requirements

### 5.1 General requirements

Fish flour shall be:

- a) free from foreign matters; and
- b) free from off odors and off flavors.

### 5.2 Specific requirements

Fish flour shall comply with specific requirements stipulated in Table 1 when tested in accordance with test methods specified therein.

**Table 1 — Quality requirements for fish flour**

S/N	Parameter	Requirement	Test methods
i.	Moisture, %, max.	9	ISO 712
ii.	Crude protein, %, min	60	ISO 20483
iii.	Crude fat, %, max	9	ISO 7305
iv.	Sodium chloride, %, max.	5	AOAC 937.09
v.	Total ash, % max	15	ISO 2171
vi.	Acid insoluble ash, %, max.	0.5	ISO 5985

## 6 Contaminants

### 6.1 Histamine

When tested in accordance with AOAC 977.13, the level of histamine in fish such as scromboids species shall not exceed 200 mg/kg.

### 6.2 Heavy metals

Fish flour shall not contain heavy metals in levels exceeding the limits indicated in Table 2 when tested in accordance with test methods therein

**Table 2 — Heavy metal limits for fish flour**

S/N	Heavy metal	Maximum limit (mg/kg)	Test method
i.	Lead	0.3	AOAC 972.23
ii.	Mercury	0.5	AOAC 2015.01

### 6.3 Aflatoxins

When tested in accordance with ISO 16050, the level of total aflatoxin in fish flour shall not exceed 10 µg/kg.

#### 6.4 Veterinary drug residues

Fish flour shall comply with those maximum veterinary drug residue limits established by the Codex Alimentarius Commission.

#### 6.5 Pesticide residues

Fish flour shall comply with those maximum pesticides residue limits established by the Codex Alimentarius Commission.

### 7 Hygiene

Fish flour shall be produced and handled in a hygienic manner in accordance with EAS 39 and CXC 52 and shall comply with the microbiological limits given in Table 3 when tested in accordance with the test methods specified therein.

**Table 4 — Microbiological limits for fish flour**

S/N	Type of microorganism	Maximum limit	Test method
i.	Total viable count, cfu/g	10 <sup>5</sup>	ISO 4833-1
ii.	<i>Salmonella spp</i> in 25 g	Absent	ISO 6579-1
iii.	<i>Escherichia coli</i> , cfu/g	Absent	ISO 16649-2
iv.	<i>Staphylococcus aureus</i> , cfu/g	Absent	ISO 6888-1
v.	<i>Clostridium botulinum</i> , cfu/g	Absent	ISO/TS 17919
vi.	Yeast and moulds, cfu/g	10 <sup>2</sup>	ISO 21527-2

### 8 Packaging

Fish flour shall be packaged in food grade containers.

### 9 Labelling

In addition to the requirements in EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked:

- a) name of the product shall be “fish flour”;
- b) name and address of processor/manufacturer/packer; distributor, importer, exporter or vendor;
- c) net weight;
- e) lot/batch number;

- f) date of manufacture;
- g) expiry date;
- h) storage conditions;
- i) instruction for use;
- j) instructions on disposal of used package; and
- k) country of origin.

## **10 Sampling**

Sampling shall be done in accordance with CXG 50.