

# CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture  
Organization of  
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## STANDARD FOR CRACKERS FROM MARINE AND FRESHWATER FISH, CRUSTACEAN AND MOLLUSCAN SHELLFISH

CXS 222-2001

Adopted in 2001. Amended in 2011, 2013, 2016, 2018 and 2024.

**2024 Amendments**

Following decisions taken at the Forty-seventh Session of the Codex Alimentarius Commission in November 2024, Section 6.4 Labelling of non-retail containers was added to include a reference to the *General standard for the labelling of non-retail containers of foods* (CXS 346-2021); and Section 7 Sampling, examination and analysis was amended by replacing methods of analysis with a reference to the *Recommended methods of analysis and sampling* (CXS 234-1999).

## 1. SCOPE

This standard shall apply to crackers prepared from marine and freshwater fish, crustacean and molluscan shellfish. It does not include ready-to-eat fried as well as artificially flavoured fish, crustacean and molluscan shellfish crackers.

## 2. DESCRIPTION

### 2.1 Product definition

The product is a traditional food made from fresh fish or frozen minced flesh of either marine (including both the red meat and white meat species) or freshwater fish, crustacean (including prawns and shrimps) and molluscan shellfish (including squids, cuttlefish, oysters, clams, mussels and cockles) as described in Section 3.1 and other ingredients as described in Section 3.2.

### 2.2 Process definition

The product shall be prepared by mixing all the ingredients, forming, cooking, cooling, slicing and drying.

The product shall be packed in a suitable packaging material which is moisture proof and gas impermeable. It shall be processed and packaged so as to minimize oxidation.

### 2.3 Handling practice

Fresh marine and freshwater fish, crustacean and molluscan shellfish shall be preserved immediately after harvesting by chilling or icing to bring its temperature down to 0 °C (32 °F) as quickly as possible as specified in the *Code of practice for fish and fishery products* (CXC 52-2003)<sup>1</sup> and kept at an adequate temperature to prevent spoilage and bacterial growth prior to processing.

## 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 3.1 Raw material

Fresh marine and freshwater fish, crustacean and molluscan shellfish shall mean freshly-caught, chilled or frozen marine and freshwater fish, crustacean and molluscan shellfish. Frozen minced flesh shall mean freshly-caught, chilled or frozen marine and freshwater fish, crustacean and molluscan shellfish which has been appropriately processed. The marine and freshwater fish, crustacean and molluscan shellfish shall have a characteristic fresh appearance, colour and odour.

### 3.2 Other ingredients

Other ingredients shall be of food-grade quality and conform to all applicable Codex standards.

### 3.3 Optional ingredients

The product may contain sugar as well as suitable spices.

### 3.4 Final product

The product shall display a uniform size, shape, colour, thickness and texture.

The product shall comply with the requirements prescribed in Table 1.

**Table 1: Requirements for crackers from marine and freshwater fish, crustacean and molluscan shellfish**

Characteristics	Grade	Fish	Crustacean and molluscan shellfish
Crude protein (N x 6.25), percent w/w min.	I	12	8
	II	8	5
	III	5	2
Moisture content, percent w/w	I	)	)
	II	)	)
	III	)	)
		8 to 14	8 to 14

## 4. FOOD ADDITIVES

Flavour enhancers and sequestrants used in accordance with Table 1 and Table 2 of the *General standard for food additives* (CXS 192-1995)<sup>2</sup> in food category 09.2.5 (Smoked, dried, fermented, and/or salted fish and fish products, including molluscs, crustaceans, and echinoderms) and their parent food categories are acceptable for use in foods conforming to this standard.

## 5. HYGIENE

It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the *General principles of food hygiene* (CXC 1-1969),<sup>3</sup> the *Code of practice for fish and fishery products* (CXC 52-2003)<sup>1</sup> and other relevant Codex codes of hygienic practice and codes of practice.

The products should comply with any microbiological criteria established in accordance with the *Principles and guidelines for the establishment and application of microbiological criteria related to foods* (CXG 21-1997).<sup>4</sup>

## 6. LABELLING

In addition to the provisions of the *General standard for the labelling of pre-packaged foods* (CXS 1-1985),<sup>5</sup> the following specific provisions apply:

### 6.1 Name of the food

The name of the product from marine and freshwater fish shall be "Fish crackers" and those from crustacean and molluscan shellfish shall depict the common name of the species, like "Prawn crackers" or "Squid crackers".

### 6.2 Grades

When declared by grade, the package shall declare the grade as prescribed in Table 1.

### 6.3 Additional requirements

The package shall bear clear directions for keeping the product from the time it is purchased from the retailer to the time of its use and directions for cooking.

### 6.4 Labelling of non-retail containers

The labelling of non-retail containers should be in accordance with the *General standard for the labelling of non-retail containers of foods* (CXS 346-2021).<sup>6</sup>

## 7. SAMPLING, EXAMINATION AND ANALYSES

### 7.1 Sampling

Sampling of lots for examination of the products shall be in accordance with an appropriate sampling plan with an AQL of 6.5.

### 7.2 Examination

#### 7.2.1 Sensory and physical examination

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with the *Recommended methods of analysis and sampling* (CXS 234-1999).<sup>7</sup>

### 7.3 Analysis

For checking the compliance with this standard, the methods of analysis and sampling contained in CXS 234-1999 relevant to the provisions in this standard shall be used.

#### 7.3.1 Determination of crude protein

According to AOAC 920.87 or 960.52.

#### 7.3.2 Determination of moisture

According to AOAC 950.46B (air drying).

## 8. DEFINITION OF DEFECTIVES

The sample unit shall be considered defective when it exhibits any of the properties defined below:

### 8.1 Foreign matter

The presence in the sample unit of any matter which has not been derived from materials specified in Sections 3.1, 3.2, 3.3, does not pose a threat to human health and is readily recognized without magnification that indicates non-compliance with good manufacturing and sanitation practices.

### 8.2 Odour and flavour

Unfried crackers affected by persistent and distinct objectionable odours and fried crackers affected by

persistent and distinct objectionable flavours indicative of decomposition (such as putrid), or contamination by foreign substances (such as fuel oil and cleaning compound).

### **8.3 Bones**

**Crackers** with more than one bone greater than 3 mm in diameter and 5 mm in length that affects more than 25 percent of the sample unit.

### **8.4 Discolouration**

Pronounced black, whitish or yellowish discolouration indicative of mould or fungal growth on the surface of crackers that affects more than 10 percent of the sample unit.

## **9. LOT ACCEPTANCE**

A lot shall be considered as meeting the requirements of this standard when:

- the total number of defectives as classified according to Section 8 does not exceed the acceptance number (c) of an appropriate sampling plan with an AQL of 6.5;
- the average net weight of all sample units is not less than the declared weight, provided no individual container is less than 95 percent of the declared weight; and
- the food additives, hygiene, and labelling requirements of Sections 4, 5 and 6 are met.

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<sup>1</sup> FAO and WHO. 2003. *Code of practice for fish and fishery products*. Codex Alimentarius Code of Practice, No. CXC 52-2003. Codex Alimentarius Commission. Rome.

<sup>2</sup> FAO and WHO. 1995. *General standard for food additives*. Codex Alimentarius Standard, No. CXS 192-1995. Codex Alimentarius Commission. Rome.

<sup>3</sup> FAO and WHO. 1969. *General principles of food hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

<sup>4</sup> FAO and WHO. 1997. *Principles and guidelines for the establishment and application of microbiological criteria related to foods*. Codex Alimentarius Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.

<sup>5</sup> FAO and WHO. 1985. *General standard for the labelling of pre-packaged foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

<sup>6</sup> FAO and WHO. 2021. *General standard for the labelling of non-retail containers of foods*. Codex Alimentarius Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome.

<sup>7</sup> FAO and WHO. 1999. *Recommended methods of analysis and sampling*. Codex Alimentarius Standard, No. CXS 234-1999.