

# CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture  
Organization of  
the United Nations



World Health  
Organization

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## STANDARD FOR QUICK-FROZEN FISH FILLETS

CXS 190-1995

Adopted in 1995. Revised in 2017. Amended in 2011, 2013, 2014 and 2024.

### 2024 Amendments

Following decisions taken at the Forty-seventh Session of the Codex Alimentarius Commission in November 2024, amendments were made in Section 6.4 Labelling of non-retail containers by replacing the text with 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 and numeric performance criteria with a reference to the *Recommended methods of analysis and sampling* (CXS 234-1999).

## 1. SCOPE

This standard applies to quick-frozen fillets of fish as defined below and offered for direct consumption without further processing. It does not apply to products indicated as intended for further processing or for other industrial purposes.

## 2. DESCRIPTION

### 2.1 Product definition

Quick-frozen fillets are slices of fish of irregular size and shape which are removed from the carcass of the same species of fish suitable for human consumption by cuts made parallel to the backbone and sections of such fillets cut so as to facilitate packing, and processed in accordance with the process definitions given in Section 2.2.

### 2.2 Process definition

The product, after any suitable preparation, shall be subjected to a freezing process and shall comply with the conditions laid down hereafter. The freezing process shall be carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly. The quick-freezing process shall not be regarded as complete unless and until the product temperature has reached  $-18\text{ }^{\circ}\text{C}$  ( $0\text{ }^{\circ}\text{F}$ ) or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain the quality during transportation, storage and distribution.

These products shall be processed and packaged so as to minimize dehydration and oxidation.

The recognized practice of repacking quick-frozen products under controlled conditions which will maintain the quality of the product, followed by the reapplication of the quick-freezing process as defined, is permitted.

### 2.3 Presentation

Any presentation of the product shall be permitted provided that it:

- meets all requirements of this standard; and
- is adequately described on the label to avoid confusing or misleading the consumer.

Fillets may be presented as boneless, provided that boning has been completed including the removal of pin-bones.

## 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 3.1 Fish

Quick-frozen fish fillets shall be prepared from sound fish which are of a quality fit to be sold fresh for human consumption.

### 3.2 Glazing

If glazed, the water used for glazing or preparing glazing solutions shall be of potable quality or shall be clean seawater. Potable water is freshwater fit for human consumption. Standards of potability shall not be less than those contained in the latest edition of the World Health Organization's *Guidelines for drinking-water quality*.<sup>1</sup> Clean seawater is seawater which meets the same microbiological standards as potable water and is free from objectionable substances.

### 3.3 Other ingredients

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

### 3.4 Decomposition

The products shall not contain more than 10 mg/100 g of histamine based on the average of the sample unit tested. This shall apply only to species of Clupeidae, Scombridae, Scombrosocidae, Pomatomidae and Coryphaenidae families.

### 3.5 Final product

Products shall meet the requirements of this standard when lots examined in accordance with Section 9 comply with the provisions set out in Section 8. Products shall be examined by the methods given in Section 7.

#### 4. FOOD ADDITIVES

Antioxidants and humectants 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 09.2.1 (Frozen fish, fish fillets, and fish products, including molluscs, crustaceans, and echinoderms) and its parent food categories are acceptable for use in foods conforming to this standard.

#### 5. HYGIENE

It is recommended that the products 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>4</sup> the *Code of practice for the processing and handling of quick-frozen foods* (CXC 8-1976)<sup>5</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>6</sup>

When tested by appropriate methods of sampling and examination prescribed by the Codex Alimentarius Commission (CAC), the product:

- shall be free from microorganisms or substances originating from microorganisms in amounts which may present a hazard to health in accordance with standards established by the CAC;
- shall not contain histamine that exceeds 20 mg/100 g. This applies only to species of Clupeidae, Scombridae, Scombresocidae, Pomatomidae and Coryphaenidae families; and
- shall not contain any other substance in amounts which may present a hazard to health in accordance with standards established by the CAC.

#### 6. LABELLING

In addition to the *General standard for the labelling of pre-packaged foods* (CXS 1-1985),<sup>7</sup> the following specific provisions apply:

##### 6.1 Name of the food

The name of the product as declared on the label shall be "... fillets" or "fillets of ..." according to the law, custom or practice in the country in which the product is to be distributed.

There shall appear on the label reference to the form of presentation in close proximity to the name of the food in such additional words or phrases that will avoid misleading or confusing the consumer.

The term "quickfrozen", shall also appear on the label, except that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with subsection 2.2 of this standard.

The label shall state that the product should be maintained under conditions that will maintain the quality during transportation, storage and distribution. If the product has been glazed with seawater, a statement to this effect shall be made.

##### 6.2 Net contents (glazed products)

Where the food has been glazed the declaration of net contents of the food shall be exclusive of the glaze.

##### 6.3 Storage instructions

The label shall include terms to indicate that the product shall be stored at a temperature of -18° C or colder.

##### 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>8</sup>

#### 7. SAMPLING, EXAMINATION AND ANALYSIS

##### 7.1 Sampling

- Sampling of lots for examination of the product shall be in accordance with an appropriate sampling plan with an AQL of 6.5. A sample unit is the primary container or for individually quick-frozen products is at least a 1 kg portion of the sample unit.
- Sampling of lots for examination of net weight shall be carried out in accordance with an appropriate sampling plan meeting the criteria established by the CAC.

## 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 procedures elaborated in the *Recommended methods of analysis and sampling* (CXS 234-1999)<sup>9</sup> and the *Guidelines for the sensory evaluation of fish and shellfish in laboratories* (CXG 31-1999).<sup>10</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.

## 8. DEFINITION OF DEFECTIVES

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

### 8.1 Dehydration

Greater than 10 percent of the surface area of the sample unit or for pack sizes described below, exhibits excessive loss of moisture clearly shown as white or yellow abnormality on the surface, which masks the colour of the flesh and penetrates below the surface, and cannot be easily removed by scraping with a knife or other sharp instrument without unduly affecting the appearance of the product.

<u>Pack size</u>	<u>Defect area</u>
a) ≤200 g units	≥ 25 cm <sup>2</sup>
b) 201 – 500 g units	≥ 50 cm <sup>2</sup>
c) 501 – 5000 g units	≥ 150 cm <sup>2</sup>

### 8.2 Foreign matter

The presence in the sample unit of any matter, which has not been derived from fish, does not pose a threat to human health, and is readily recognized without magnification or is present at a level determined by any method including magnification that indicates non-compliance with good manufacturing and sanitation practices.

### 8.3 Parasites

The presence of two or more parasites per kg of the sample unit detected by the method described in the *Recommended methods of analysis and sampling* with a capsular diameter greater than 3 mm or a parasite not encapsulated and greater than 10 mm in length.

### 8.4 Bones (in packs designated boneless)

More than one bone per kg of product greater or equal to 10 mm in length, or greater or equal to 1 mm in diameter; a bone less than or equal to 5 mm in length, is not considered a defect if its diameter is not more than 2 mm. The foot of a bone (where it has been attached to the vertebra) shall be disregarded if its width is less than or equal to 2 mm, or if it can easily be stripped off with a fingernail.

### 8.5 Odour and flavour

A sample unit affected by persistent and distinct objectionable odours or flavours characteristic of decomposition, rancidity or feed.

### 8.6 Flesh abnormalities

A sample unit affected by excessive gelatinous condition of the flesh together with greater than 86 percent moisture found in any individual fillet or a sample unit with pasty texture resulting from parasitic infestation affecting more than 5 percent of the sample unit by weight.

## 9. LOT ACCEPTANCE

A lot will 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 contents of all containers examined is not less than the declared weight, provided there is no unreasonable shortage in any containers; and
- the food additives, hygiene and the labelling requirements of Sections 4, 5 and 6 are met.

## NOTES

<sup>1</sup> WHO. 2017. *Guidelines for drinking-water quality: fourth edition incorporating the first addendum*. Geneva. [www.who.int/publications/i/item/9789241549950](http://www.who.int/publications/i/item/9789241549950)

<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. 2003. *Code of practice for fish and fishery products*. Codex Alimentarius Code of Practice, No. CXC 52-2003. Codex Alimentarius Commission. Rome.

<sup>5</sup> FAO and WHO. 1976. *Code of practice for the processing and handling of quick-frozen foods*. Codex Alimentarius Code of Practice, No. CXC 8-1976. Codex Alimentarius Commission. Rome.

<sup>6</sup> FAO and WHO. 1997. *Principles and guidelines for the establishment and application of microbiological criteria for foods*. Codex Alimentarius Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.

<sup>7</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>8</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>9</sup> FAO and WHO. 1999. *Recommended methods of analysis and sampling*. Codex Alimentarius Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.

<sup>10</sup> FAO and WHO. 1999. *Guidelines for the sensory evaluation of fish and shellfish in laboratories*. Codex Alimentarius Guideline, No. CXG 31-1999. Codex Alimentarius Commission. Rome.