

هيئة التقييس لدول مجلس التعاون لدول الخليج العربية
STANDARDIZATION ORGANIZATION FOR G.C.C (GSO)



GSO 270/ 1994

الأسماك المدخنة
SMOKED FISH

ICS:67.120.30

SMOKED FISH

Date of GSO Board of Directors' Approval : **1415(H)-06-13 (1994-11-16)**
Issuing Status : **Technical Regulation**

SMOKED FISH**1- SCOPE AND FIELD OF APPLICATION**

This standard is concerned with smoked fish and does not cover smoked mollusca or smoked crustaceans.

2- COMPLEMENTARY REFERENCES

- 2.1 GSO 9/1995 “Labelling of Prepackaged Foods”.
- 2.2 GSO 20/1984 “Methods for the Determination of Contaminating Metallic Elements in Foodstuffs”.
- 2.3 GSO 382/1994 “Maximum Limits of Pesticide Residue – Permitted in Food Products: Part 1”.
- 2.4 GSO 383/1994 “Maximum Limits of Pesticide Residue – Permitted in Food Products: Part 2”.
- 2.5 GSO Standard on “Methods of Sampling Fish, Shellfish and Their Products”.
- 2.6 GSO 589/1995 “Methods of Physical and Chemical Analysis of Fish, Shellfish and Their Products”.
- 2.7 GSO Standard on “Hermetically Sealed Round Tin Cans Used for Canning Foodstuffs”.
- 2.8 GSO 655/1996 “Methods of Microbiological Examination for Meat, Fish and Shellfish”.

3- DEFINITIONS

- 3.1 Smoked fish: Fresh or frozen fish prepared by an appropriate method salted and partially dried, then either exposed to smoke produced by incomplete and slow burning of special types of wood or sawdust using the cold or hot method, or dipped for a few seconds in liquid smoke of an appropriate concentration.
- 3.2 Fresh fish: Freshly caught fish which have received no preservation treatment or which have been preserved by chilling.
- 3.3 Frozen fish: Fresh fish which have been subjected to a quick freezing process sufficient to reduce its temperature to a level low enough to preserve its quality, and which have been maintained at a temperature of not more than (-18)°C.
- 3.4 Smoke: Volatile matters derived from burning of wood, sawdust or any other suitable products.
- 3.5 Smoke powder: A preparation containing natural wood smoke absorbed to water soluble powder of food grade.
- 3.6 Smoke liquid: A solution produced from condensation of absorption of wood smoke in food liquid – or produced from dissolving smoke powder in water.

- 3.7 Cold smoking: Smoking the fish at a temperature not exceeding 30°C where the product does not show any signs of heat denaturation of the protein.
- 3.8 Hot smoking: Smoking the fish at 85°C and for a period of time sufficient for denaturation of protein throughout the product.

4- CHARACTERISTICS

The following characteristics shall be met in smoked fish:

- 4.1 The fish intended for processing shall be fit for human consumption and shall be processed according to good manufacture practice.
- 4.2 The pressure inside the cans shall be less than the atmospheric pressure at room temperature (25-33)°C in the case of canned product.
- 4.3 The final product shall be free from blood spots, pieces of adhering gut, residuals of wood burning, objectionable odour and taste and any other foreign matters.
- 4.4 The product shall have a uniform colour, glossy pellicle and characteristic odour.
- 4.5 The product shall have a flexible consistence against the pressing touch and shall not be flabby. It shall be free from sticky substances or salt crystals adhering to the surface.
- 4.6 It shall be allowed to add some ingredients to the product as to give a particular flavour such as: molasses, sugar, pepper and cloves.
- 4.7 The pesticide limits shall not be more than the maximum limits specified in the GSO standards mentioned in 2.3 and 2.4.
- 4.8 The contaminating metallic elements shall not exceed what is mentioned in against each (p.p.m.):

Mercury	0.5
Arsenic	1.0
Lead	2.0
Copper	20.0
Tin	40.0 in the case of uncanned product 250.0 in the case of canned product

- 4.9 Microbiological characteristics for smoked fish shall be according to the following table.

Microbiological Characteristics of Smoked Fish

Smoked Fish Type	Microbes	Limit/gm			
		n	c	m	M
Smoked fish either types; cooked prior to eating or eaten uncooked.	- Total count of bacteria (25°C)	5	3	10 ⁵	10 ⁶
	- Fecal coliform (MPN)	5	3	4	400
	- Staphylococcus aureus positive to coagulase	5	1	10 ³	2x10 ³

Where:

- n = The number of sample units that must be examined.
- c = The maximum allowable number of sample units, to give values between “m” and “M”.
- m = Level or value of microbial limit which is to be met in the product.
- M = Maximum value of microbial limit which should not be reached or exceeded, in any unit from “n”.

4.10 The sample is considered as defective if it contains more than one parasite with capsular diameter greater than 3 mm or parasite not encapsulated and greater than 1 cm in length or parasite which is objectionable by virtue of its colour or any other sensory characteristics.

5- SAMPLING

Samples shall be taken according to the GSO standard mentioned in 2.5.

6- METHODS OF TEST

Tests shall be carried out on the representative sample taken according to item (5), to verify its compliance with the GSO standards mentioned in 2.6, 2.8 and 2.2.

7- PACKAGING

The following shall be met during packaging of smoked fish:

- 7.1 The packages used shall be hygienic and made of suitable, sound and clean material that does not react with the product, or be a cause of contaminating it with any objectionable matter. In the case of canned products, the cans shall comply with the GSO standard mentioned in 2.7, or be oblong or oval tin cans.
- 7.2 In the case of chilled or frozen products, the permeability of packaging materials against water vapour, odours and oxygen shall be as minimum as possible.
- 7.3 Every package shall contain one species of fish.
- 7.4 The packages in which the product is packed shall be placed inside wooden boxes or in water proof cardboard boxes to ensure complete protection of the containers from contamination, mechanical damage and dehydration during transportation, handling and storage.
- 7.5 Units packed in one container shall be identical in shape, weight and fish species.

8- LABELLING

Without prejudice to the requirements specified in the GSO standard mentioned in 2.1, the following information shall be mentioned on the label:

- 8.1 Fish species.
- 8.2 Type of smoking used (hot or cold smoking).

- 8.3 Food additives, listed in a descending order as to their ratio of content.
- 8.4 Instructions specifying the circumstances of transportation and storage.
- 8.5 Instructions specifying whether the product is ready for consumption without cooking or needs cooking and an indication of the cooking time.
- 8.6 The production and expiration dates in a non-coded manner (day – month – year).

9- TRANSPORTATION AND STORAGE**9.1 Transportation**

- 9.1.1 Transportation shall be carried out by suitable means far from any toxic or harmful materials.
- 9.1.2 The transportation means used for the transport of chilled smoked fish shall be mechanically refrigerated so that the temperature at which the product is maintained during transportation shall not exceed 0°C, and in the case of frozen smoked fish this temperature shall not exceed (-18)°C.
- 9.1.3 All surfaces of the transportation means which come into contact with containers during transportation shall be smooth and easy to clean and disinfect.

9.2 Storage**9.2.1 Chilled smoked fish**

- 9.2.1.1 The chilled smoked fish shall be stored at 0°C and the expiry period shall not exceed 14 days for cold smoked fish and 7 days for hot smoked fish.
- 9.2.1.2 It is not allowed to freeze the chilled smoked fish.

9.2.2 Frozen smoked fish

The frozen smoked fish shall be stored at a temperature of not more than (-18)°C and the expiry period shall not exceed 9 months from the date of processing.

9.2.3 Canned smoked fish

The canned smoked fish shall be stored at room temperature (25-33)°C, and the expiry period shall not exceed 24 months from the date of processing.