

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

مشروع: نهائي

**GSO5/FDS...../2008**

**الأسماك المملحة**  
**SALTED FISH**

إعداد

اللجنة الفنية الخليجية لقطاع مواصفات المنتجات الغذائية والزراعية

هذه الوثيقة مشروع لمواصفة قياسية خليجية تم توزيعها لإبداء الرأي والملاحظات بشأنها، لذلك فإنها عرضة للتغيير والتبديل، ولا يجوز الرجوع إليها كمواصفة قياسية خليجية إلا بعد اعتمادها من مجلس إدارة الهيئة الخليجية.

## Foreword

Standardization Organization for GCC (GSO) is a regional Organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards /Technical regulation through specialized technical committees (TCs).

GSO through the technical program of committee TC No 5 " The Gulf Technical Committee for Food and Agricultural Standards Products" has prepared this Standard . The Draft Standard has been prepared by (KINGDOM OF SAUDI ARABIA )

The draft Standard has been prepared based on relevant ADMO, International and National foreign Standards and references.

This standard has been approved as Gulf (Standard / Technical Regulation) by GSO Board of Directors in its meeting No..../.... .....held on / / / H , / / G

**SALTED FISH**

**Date of GSO Board of Directors' Approval :  
Issuing Status :**

# **SALTED FISH**

## **1- SCOPE AND FIELD OF APPLICATION**

This standard is concerned with salted fish ready for human consumption prepared from fresh or chilled or frozen fish.

## **2- COMPLEMENTARY REFERENCES**

- 2.1** GSO 9 “Labelling of Prepackaged Foods”.
- 2.2** GSO Standard on “Methods of Sampling for Fish, Shellfish and Their Products”.
- 2.3** GSO 655 “Methods for Microbiological Examination of Meat, Fish, Shellfish and Their Products”.
- 2.4** GSO 20 “Methods for the Determination of Contaminating Metallic Elements in Foodstuffs”.
- 2.5** GSO Standard on “Salt for Foodstuffs”.
- 2.6** GSO 21 “Hygienic Regulations for Food Plants and Their Personnel”.
- 2.7** GSO 22 “Methods of Testing Colouring Matter Used in Foodstuffs”.
- 2.8** GSO 150 “Expiration Periods for Food Products - Part I”.
- 2.9** GSO 88 “Meat and its Products - Determination of Chloride Content”.
- 2.10** GSO 380 “Chilled Fish”.
- 2.11** GSO 1753 “Frozen Fish”.
- 2.12** GSO 839 “Food - Packages - Part 1: General Requirements”.
- 2.13** GSO Standard on “Food Packages - Part II: Plastic Packages - General Requirements”.
- 2.14** GSO 988 “Limits of Radioactivity Levels Permitted in Foodstuffs”.
- 2.15** GSO 998 “Methods for Limits Detection of Radioactivity Levels Permitted in Foodstuffs”.
- 2.16** GSO 1016 “Microbiological Limits for Foods - Part 1”.
- 2.17** GSO 382 “Limits of Pesticides Residues Permitted in Foodstuffs Part I”.
- 2.18** GSO 383 “Limits of Pesticides Residues Permitted in Foodstuffs Part II”.
- 2.19** GSO Standard on “fish products determination of histamine (reference method)”.

### 3- DEFINITION

- 3.1 Salting:** Physico-chemical process by which salt penetrates the fish, moisture is forced out of the tissues, producing a change in weight.
- 3.2 Dry salting:** Process mixing of fish with dry salt.
- 3.3 Brining:** Process immersion of fish in brine solution.
- 3.4 Salted fish:** Resulting processes (items 3.1 and 3.2 or 3.1 and 3.3) for any species of fish that had the suitability of salting for purpose of maturation in order to acquire the organoleptic character.
- 3.5 Rust:** Spoilage of salted products, giving them an unpleasant taste and a rancid fat smell, and a surface color of rusty iron.

### 4- REQUIREMENTS

The following requirements shall be met in salted fish:

- 4.1** The product shall be prepared according to hygienic regulations obtained in GSO Standard stated in items (2.6).
- 4.2** The fish used in the manufacture of the product shall be in accordance with GSO Standard standard mentioned in item 2.10 and 2.11.
- 4.3** The product shall be firm and contain the organoleptic character for each species.
- 4.4** The product shall be from fish of same types and species and identical in size.
- 4.5** The product shall be free from artificial colours, rust, rancid or any foreign odour.
- 4.6** The product shall be free from pink colouration produced by halophilic microorganisms.
- 4.7** The product shall be free from maggot infestation.
- 4.8** Salt using in salting processes shall be in accordance with GSO Standard mentioned in item (2.5).
- 4.9** Salt percentage in the final product shall not exceed 14% and not decrease than 6% by mass.
- 4.10** Moisture percentage in the final product shall not be exceed 56% and not less than 43% by mass.
- 4.11** Degree of hydrogen-ion concentration shall not exceed 6.7 by mass.
- 4.12** Spices permissible to be added according to the good production.
- 4.13** Histamine content shall not exceed 30 mg/100 g in the final product.
- 4.14** The contaminating metallic elements should not exceed (PPM):

- Mercury ..... 0.5
- Arsenic ..... 0.5
- Lead ..... 1.0
- Cadmium ..... 0.5
- Zinc ..... 40.0

- 4.15** The microbiological criteria shall not exceed the limits stated in GSO Standard mentioned in item (2.16).
- 4.16** The limits of radioactivity levels shall not exceed the maximum limits stated in GSO Standard mentioned in item (2.14).
- 4.17** Pesticides residues in the products shall not be more than limit permitted according to GSO Standard stated in item (2.17).

## **5- SAMPLING**

Samples shall be taken according to GSO Standard stated in item (2.2).

## **6- METHODS OF INSPECTION AND TESTS**

All required tests shall be carried out on the representative samples taken according to item (5).

- 6.1** Microbiological examination shall be determined according to GSO Standard mentioned in item (2.3).
- 6.2** Contaminating metallic elements shall be determined according to GSO Standard mentioned in item (2.4).
- 6.3** Detection of colouring matter shall be determined according to GSO Standard mentioned in item (2.7).
- 6.4** Sodium chloride content shall be determined according to GSO Standard mentioned in item (2.9).
- 6.5** Detection of radioactivity limits shall be determined according to GSO Standard mentioned in item (2.15).
- 6.6** Determination of histamine shall be determined according to GSO Standard mentioned in item (2.19).

**7- PACKING, TRANSPORTATION AND STORING****7.1 Packing**

Without prejudice to the provision of GSO Standard stated in items (2.1) and (2.13), the following shall be met during packing:

**7.1.1** The packages used in the packing shall be clean, hygienic, made of suitable material, which would not cause contamination during storage, transportation and handling.

**7.1.2** Salted fish shall be packed in suitable package according to their type and species. The product units in each package shall be identical in the shape, size and weight.

**7.2 Transportation and Storage**

The following shall be met during transportation and storing of salted fish:

**7.2.1** A suitable transportation unit has not been used for transporting poisonous or hazardous material shall be used.

**7.2.2** Transportation and storage shall be carried out by means that protect the product from mechanical damages and deterioration.

**7.2.3** Expire date for salted fish shall be according to GSO Standard stated in item (2.8).

**8- LABELLING**

Without prejudice to the provision of GSO Standard stated in item 2.1, the following information shall be declared on the label:

**8.1** The word “salted fish” with declares the type of fish and the method used for the salting process.

**8.2** In case of large package write the previous information with a clear manner.

**REFERENCES**

- Egyptian Standard  
No. 1725/1996  
Salted Fish - Part 3: Molouha.
  
- Zaitsev et al., 1969  
Fish curing and processing  
MIR Publish Moscow
  
- Conell, J.J. 1980  
Control of fish quality  
Fishing News Books Ltd.  
Farnham, Surreys, England
  
- Youssef, H. 1974  
Studies on the nutritive value  
And sanitary conditions of salted  
Fish and Upper Egypt. M.V.Sc. Thesis  
(Meat Hygiene), Faculty of Vet. Med.,  
Assiut Univ., 9 Egypt.