

## 1 Scope

This standard applies to cultured or wild-caught Siganid (Rabbitfish) species of the *Siganidae* family prepared and marketed chilled or frozen, intended for human consumption.

Siganid could be obtained from, but not limited to the species listed in Annex A.

## 2 Reference

The titles of the standards publications referred to in this standard are listed on the inside back cover.

## 3 Definition of terms

For the purpose of the standard, the following terms shall mean:

**3.1 Chilling** refers to the process of cooling fish to a temperature approaching that of melting ice

**3.2 Contaminant** refers to any biological or chemical agent, foreign matter, or other substances not intentionally added to the food, which may compromise food safety or its suitability

**3.3 Eviscerated** refers to having at least the gut and all the internal organs removed

**3.4 Food additive** refers to any substances other than the basic food stuff present in the food as a result of any aspect of production, processing, storage or packaging but not include chance contaminants

**3.5 Freezer burn** refers to the loss of moisture from frozen products through evaporation. This may occur if the products are not properly glazed, packaged or stored.

**3.6 Freezing** refers to a process that is carried out in appropriate equipment in which the initial temperature of the product is reduced to -18°C (0°F) or lower with most of the tissue water turning into ice. The process shall not be regarded complete unless and until the product temperature has reached -18°C or lower at the thermal center after thermal stabilization

**3.7 Fresh-chilled fish** refers to fish or fishery products that have received no preserving treatment other than chilling

**3.8 Fresh-frozen fish** refers to fish that have been subjected to a freezing process sufficient to reduce the temperature of the whole product to a level low enough to preserve the inherent quality of the fish, and that have been maintained at a temperature of -18°C or lower.

48 **3.9 Glazing** refers to the application of a protective layer of ice formed at the surface  
49 of a frozen product by spraying it with, or dipping it into potable water  
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51 **3.10 Potable water** refers to water suitable (both for health and acceptability  
52 considerations) for drinking and cooking purposes  
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## 54 **4 Description**

### 55 **4.1 Product description**

#### 56 **4.1.1 Fresh-chilled Siganid**

57  
58 Fresh whole or gutted siganid, which are hygienically handled and chilled at temperature  
59 of 0-4°C to keep the product fresh.  
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#### 62 **4.1.2 Fresh-frozen Siganid**

63  
64 Fresh whole or gutted siganid, which are hygienically handled and frozen at -18°C or  
65 lower to preserve and maintain its quality.  
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### 68 **4.2 Process description**

#### 69 **4.2.1 Chilling**

70  
71 Fresh siganid whole or gutted, cleaned and washed with potable water, handled in  
72 accordance with hygienic practices and subjected to immediate chilling at 0-4°C.  
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#### 75 **4.2.2 Freezing**

76  
77 Fresh siganid whole or gutted, cleaned and washed with potable water and subjected to  
78 immediate freezing to a core temperature of -18°C or lower, packed and stored at -18°C  
79 or lower.  
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81 Immediate pre-chilling must be done after harvest with proper icing prior to freezing or  
82 further processing.

## 83 **5 Essential composition and quality factors**

### 84 **5.1 Basic ingredient**

#### 85 **5.1.1 Raw material**

86  
87 The products shall be properly handled during harvest and transport to ensure best  
88 quality siganid, which are fit to be sold fresh for human consumption.  
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94 **5.1.2 Water**

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96 Water for washing, cleaning, glazing and cooling shall be potable as defined in Section  
97 3.10.

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99 **5.2 Final product**

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101 **5.2.1** The final product shall meet the requirements of this standard when lots  
102 examined in accordance with Section 12-Lot Acceptance and comply with the provisions  
103 set out in Section 11-Definition of Defectives. Products shall be examined by the methods  
104 given in Section 10-Method of Sampling.

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106 **5.2.2** The final product shall conform to the following microbiological safety  
107 requirements in Table 1.

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**Table 1 – Microbiological safety requirements**

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Test/Microorganism	n	c	m	M
<i>E. coli</i> , MPN/g	5	3	11	500
<i>Staphylococcus aureus</i> (coagulase +), cfu/g	5	2	10 <sup>3</sup>	10 <sup>4</sup>
<i>Vibrio parahaemolyticus</i> , cfu/g	5	2	10 <sup>2</sup>	10 <sup>3</sup>
<i>Salmonella</i> /25 g	5	0	0	-
Aerobic Plate Count (APC)/Standard Plate Count (SPC), cfu/g	5	3	5x10 <sup>5</sup>	10 <sup>7</sup>

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Legend:

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**n** -number of sample units selected from a lot of food to be examined

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**c** -maximum allowable number of defective or marginally acceptable units

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**m** -acceptable level of microorganism determined by a specified method; the values are  
generally based on levels that are achievable under GMP

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**M** -level which when exceeded in one or more samples would cause the lot to be rejected  
as this indicates potential health hazard or imminent spoilage

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**cfu**- colony forming unit

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**MPN**-most probable number

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Source: a) *PNS for Fresh-chilled, Fresh-frozen and Treated Tuna (BAFS/PNS 138:2014)*

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b) *DOH-FDA Circular No. 2013-010, Revised Guidelines for the Assessment of  
Microbiological Quality of Processed Foods, Table 11. Fish and Fish Products: Fresh  
Frozen Fish.*

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## 6 Food additives

Food additives shall not be allowed in this product.

## 7 Contaminants

7.1 The products shall comply with the maximum tolerable level of heavy metals as specified in Table 2.

**Table 2 - Acceptable levels of heavy metals in fish**

Heavy metal	Maximum level (mg/kg)
Cadmium	0.5 <sup>1</sup>
Lead	0.3 <sup>2,3</sup>
Total Mercury	0.5 <sup>1</sup>

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Sources:

- 1 BAFS/PNS 176-2016-Philippine National Standard for Dried Anchovies
- 2 DA-BFAR FAO No. 210, s. 2001 (Rules and Regulations on the Exportation of Fresh, Chilled and Frozen Fish and Fishery/Aquatic Products)
- 3 DA-BFAR Fisheries Office Order No. 313, s. 2006 (Amendments to the Supplemental Requirements on Quality Standards for the Exportation of Fresh, Chilled and Frozen Fish and Fishery/Aquatic Products)
- 4 CODEX STAN 193-1995 (Codex General Standard for Contaminants and Toxins in Food and Feed)

7.2 The product shall not contain 200ug/kg of oxytetracycline based on the average of the sample unit tested.

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## 8 Hygiene and handling

The products shall be prepared and processed under hygienic conditions in accordance with the Revised Guidelines on Current Good Manufacturing Practice in Manufacturing, Packing, Repacking, or Holding Food (DOH AO No. 153 s. 2004) and its future amendments, and the following recommended codes of practice:

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- a) General Principles of Food Hygiene (CAC/RCP 1-1969); and
- b) Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003).

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## 9 Packaging and labeling

### 9.1 Packaging

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The product shall be packaged in appropriate food grade materials and design, which are clean and free from any foreign matter or contaminant. No instance should mixed

172 species be packed in bulk.

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## 174 **9.2 Labeling**

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176 The product shall be labeled according to the provisions of the Codex General Standard  
177 for the Labeling of Prepackaged Foods (CODEX STAN 1-1985), the Revised Rules and  
178 Regulations Governing the Labeling of Prepackaged Food Products Distributed in the  
179 Philippines (DOH Administrative Order No. 30 series of 2014) and its future  
180 amendments.

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### 182 **9.2.1 Retail package/container**

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184 Each retail product package shall be labeled and marked with the following information:

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186 a) The name of the product shall be “Fresh-chilled” or “Fresh-frozen” and the  
187 corresponding English or common/local name with its scientific name in parenthesis, e.g.  
188 Fresh-chilled Orange Spotted Spinefoot (*Siganus guttatus*) or Fresh-frozen “Samaral”  
189 (*Siganus guttatus*). The products may be called by other common/local names provided  
190 that such names are accepted in the country of distribution;

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192 b) The net content by weight in the metric system and/or number of pieces. The net  
193 weight based on other systems of measurement required by importing countries shall  
194 appear in parenthesis after the metric net weight. Where the product has been glazed,  
195 the declaration of net contents of the product shall be exclusive of the glaze;

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197 c) The label shall state that the product must be stored under conditions to maintain  
198 the best quality during transport, storage and distribution (e.g. keep  
199 refrigerated/chilled/frozen).

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201 d) The name and address of either of the following: manufacturer, packer,  
202 distributor, importer, exporter or vendor;

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204 e) The lot identification code/number;

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206 f) The words “Product of the Philippines” or the country of origin if imported;

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208 g) The pictorial presentation (optional). Pictorial presentation of the product on  
209 the label should not mislead the consumer with respect to the product so illustrated; and

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211 h) The Expiry Date (DD/MM/YYYY).

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### 213 **9.2.2 Non-retail container**

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215 Information on the above provisions shall be given either on the container or in  
216 accompanying documents, except that the name of the product, lot identification, and  
217 the name and address of the manufacturer or packer as well as storage instructions, shall  
218 appear on the container.

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220 However, the lot identification and the name and address of the manufacturer or packer  
221 may be replaced by an identification mark, provided that such mark is clearly identifiable  
222 with the accompanying documents.

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224 **10 Methods of sampling, examination and analysis**

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226 **10.1 Method of sampling**

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228 Sampling of lots for examination of the final product shall be in accordance with the  
229 Codex General Guidelines on Sampling (CAC/GL 50-2004). A sample unit is the  
230 individually packed product or a 1 kg portion from bulk containers.

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232 **10.2 Determination of heavy metals**

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234 According to the Codex Recommended Methods of Analysis and Sampling (CODEX STAN  
235 234-1999) or an equivalent analysis method.

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237 **10.3 Method of analysis**

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239 **10.3.1 Determination of microorganisms**

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241 According to the procedure described by FDA Bacteriological Analytical Manual  
242 (BAM), published by AOAC (20<sup>th</sup> edition) or an equivalent analysis method.

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244 **10.3.2 Determination of net weight**

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246 **10.3.2.1 Determination of net weight of products not covered by glaze**

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248 The net weight (exclusive of packaging material) of each sample unit representing a lot  
249 shall be determined in the frozen state.

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251 **10.3.2.2 Determination of net weight of products covered by glaze**

252  
253 As soon as the package is removed from low temperature storage, open immediately and  
254 place the contents under a gentle spray of cold water. Agitate carefully so that the  
255 product is not broken. Spray until all ice-glaze that can be seen or felt is removed.  
256 Remove adhering water by the use of paper towel and weigh the product in a tared  
257 pan.

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259 **10.3.3 Procedure for the detection of parasites**

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261 The entire sample unit is examined non-destructively by placing appropriate portions  
262 of the thawed sample unit on a 5 mm thick acrylic sheet with 45% translucency and  
263 candled with a light source giving 1500 lux 30 cm above the sheet.

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267 **11 Definition of defectives**

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269 The sample unit shall be considered as defective when it exhibits any of the properties  
270 defined below.

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272 **11.1 Foreign matter**

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274 The presence in the sample unit of any matter which has not been derived from siganid  
275 (excluding packing material), and is readily recognized without magnification or is  
276 present at a level determined by any method including magnification that indicates non-  
277 compliance with good manufacturing and sanitation practices.

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279 **11.2 Freezer burn**

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281 More than 10% of the declared weight of the frozen finfishes is affected by dehydration  
282 evident in more than 10% of the surface area.

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284 **11.3 Odor**

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286 Presence of persistent and distinct objectionable odor indicative of decomposition.

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288 **11.4 Discoloration**

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290 Any alteration in flesh/meat in the sample unit of fresh-chilled or fresh-frozen siganid  
291 such as fading in color and having dark spots, an indication of spoilage or dehydration.

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293 **11.5 Texture**

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295 Textural breakdown of the flesh, characterized by soft and mushy muscle structure.

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297 **11.6 Parasites**

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299 Presence of visible parasites or parasitic infestation.

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301 **11.8 Belly burst**

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303 The presence of ruptured bellies in an uneviscerated fish indicative of decomposition.

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305 **12 Lot acceptance**

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

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- 309 a) the total number of defective sample units as classified according to Section 11  
310 does not exceed the acceptance number (c) of the appropriate sampling plan  
311 (AQL-6.5);

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- 313 b) the average net weight of all sample units is not less than the declared weight,  
314 provided there is no unreasonable shortage in any individual container; and  
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- 316 c) the essential composition and quality factors, food additives, contaminants,  
317 hygiene and handling, and labeling requirements of Sections 5, 6,7,8 and 9,  
318 respectively, are met.  
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