

# PHILIPPINE NATIONAL STANDARD

PNS/FDA 26:2010  
ICS 67.120.30

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## Smoked fish - Specification



**BUREAU OF PRODUCT STANDARDS**

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## Foreword

The Philippine National Standard for Smoked fish and the Recommended Code of Practice for the Processing and Handling of Smoked fish were drafted simultaneously under the project entitled "Development of Standards for Ethnic Foods", reviewed by the Commodity Working Group (CWG) and Food Standards Technical Committee (FSTC) and were endorsed for adoption as Philippine National Standard and Recommended Code of Practice by the Food and Drug Administration.

The standard and recommended code of practice were developed through gathering of baseline information which included survey on existing practices of the smoked fish processors and analysis of their products. Public consultation workshops were held in the Department of Science and Technology compound and in Rosario, Cavite where the smoked fish production is well-known.

The Philippine National Standard and Recommended Code of Practice were developed to set the high standard of the product to make it more competitive in the world market, to have guide for the assurance of its quality and safety and ensure fair practices in the food trade.

**Smoked fish – Specification**

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**1 Scope**

The standard applies to hot and cold smoked fish of any species intended for human consumption or for further processing.

**2 References**

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

**3 Definition of terms**

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

**3.1****cold smoking**

it means smoking of fish at temperatures wherein the product does not show any signs of heat coagulation of the protein (Codex RCP for Smoked Fish, 1979)

**3.2****container**

it means any form of packaging material, which completely or partially encloses the food (including wrappers). A container may enclose the food as a single item or several units or types of prepackaged food when such is presented for sale to the consumer

**3.3****current Good Manufacturing Practices (cGMP)**

it is a quality assurance system aimed at ensuring that products are consistently manufactured, packed, repacked or held to a quality appropriate for the intended use. It is thus concerned with both manufacturing and quality control procedures

**3.4****filleted smoked fish**

it is smoked fish made from fish loins which have been deboned

**3.5****food**

it is any substance, whether processed or semi-processed or raw which is intended for human consumption and including beverages, chewing gum and any substance, which has been used as an ingredient on the manufacture, preparation or treatment of food

**3.6****food additive**

it refers to any substance not normally consumed as a food by itself and not normally used the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use), if such substance is not generally recognized, among experts qualified by scientific training and experience to evaluate its safety, as having been adequately shown through scientific procedures to be safe under the conditions of the intended use. (BFAD BC 2006-016)

**3.7**

**food standard**

it is a regulatory guideline that defines the identity of a given food product (i.e. its name and the ingredients used for its preparation) and specifies the minimum quality factors and, when necessary, the required fill of container. It may also include specific labeling requirements other than or in addition to the labeling requirements generally applicable to all prepackaged foods

**3.8**

**hot smoking**

it means smoking of fish at temperatures and for a sufficient period of time to obtain heat coagulation of the protein throughout (Codex RCP for Smoked Fish, 1979)

**3.9**

**ingredient**

it is any substance including food additives, used as a component in the manufacture or preparation of a food and present in the final product in its original or modified form

**3.10**

**label**

it includes any tag, brand, mark, pictorial, or other descriptive matter, written printed, marked, embossed or impressed on, or attached to a container of food

**3.11**

**labeling**

it means any written, printed or graphic matter (1) upon any article or any of its container or wrappers or (2) accompanying the packaged food

**3.12**

**liquid smoke**

it means an aqueous solution of condensed wood smoke, which when diluted may be used to impart a smoked flavor

**3.13**

**lot**

it is food produced during a period of time and under more or less the same manufacturing conditions as indicated by a specific code

**3.14**

**packaging**

it is the process of packing that is part of the production cycle applied to a bulk product to obtain the finished product. Any material, including painted material, employed in the packaging of a product including any outer packaging used for transportation of shipment. Packaging materials are referred to as primary or secondary according whether or not they are intended to be in direct contact with the product

**3.15****prepackaged**

it means packaged or made up in advance in a container, ready for sale to the consumer (BFAD Rules and Regulation Governing the Labeling of Prepackaged of Food Products Distributed in the Philippines, 1984)

**3.16****processed food**

it shall refer to food that has been subjected to some degree of processing (e.g. milling, drying, concentration and canning, etc.), which partially or completely change the physico-chemical and/or sensory characteristics of the raw material

**3.17****smoke**

it means wood (including dust) or woody plants in the natural state by combustion or friction, excluding wood or plants which have been impregnated, colored, gummed or painted or treated in a similar manner. The raw material used for the generation of smoke shall be free from extraneous materials such as plastic. The term "smoke" shall include derivatives obtained by condensation or absorption of smoke in a suitable food grade liquid. A dip, which can impart a smoky flavor to fishery products, can be prepared by diluting an appropriate quantity of the absorbed condensate in potable water (Codex RCP for Smoked Fish, 1979)

**3.18****smoking**

it is the traditional process of treating fish by exposing it to the smoke from burning or smoldering plant materials [or smoke concentrates (liquid smoke) derived from burning or smoldering plant materials].(Codex Proposed Draft Standard for Smoked Fish, 2008)

**3.19****split smoked fish**

it is smoked fish prepared from fish that has been cut along the dorsal side from the base of the tail to the tip of the head with the internal organs and gills removed

**3.20****whole smoked fish**

it is fish smoked in its original form, which has not been cut and may or may not have been eviscerated, and with scales intact

**4 Description****4.1 Product definition**

Smoked fish is a product prepared from fresh or frozen fish treated with smoke. It should have smoked flavor and aroma.

## 4.2 Product presentation

The product may be hot or cold smoked fish. It may be presented as any of the following:

**4.2.1 Whole smoked fish** – presented in its original form which may or may not have been eviscerated and with other parts intact.

**4.2.2 Split smoked fish** – presented as butterfly-split fish, with or without bones, heads and fins.

**4.2.3 Filleted smoked fish** – presented as deboned fish loins.

## 4.3 Process description

### 4.3.1 Hot smoking.

The fish may be salted by dry salting, brining or any other salting methods, either precooked or not in brine, with or without drying prior to smoking at a temperature high enough to allow coagulation of the fish proteins.

### 4.3.2 Cold smoking.

The fish may be salted by dry salting, brining or any other salting methods then subjected to smoking at an appropriate time and temperature combination to prevent coagulation of the fish proteins.

## 4.4 Finished product storage

All finished products shall be stored frozen at temperatures not higher than -10°C.

## 5 Essential composition and quality factors

### 5.1 Raw materials, ingredients and smoking materials

#### 5.1.1 Basic ingredients

**5.1.1.1 Raw materials (fish)** – shall be sound and wholesome, fresh, chilled or frozen fish, and fit for human consumption. The fish is obtained or prepared from any of the species listed but not limited to those in Annex A - Species of finfishes utilized in the production of smoked fish.

**5.1.1.2 Salt** – shall be of food grade quality and meets the requirements and standards for iodized salt as per R.A. No. 8172: An Act Promoting Salt Iodization Nationwide and for Related Purposes (Annex B).

**5.1.1.3 Water** – shall be water fit for human consumption and meets the potability requirements prescribed in the Philippine National Standards for Drinking Water as per DOH Administrative Order No. 2007-0012 (Annex C).

### **5.1.2 Optional ingredients**

All other ingredients used shall be of food grade quality and conform to all applicable standards, which may include, but not limited to the following:

**5.1.2.1** Seasonings and condiments;

**5.1.2.2** Herbs and spices; and

**5.1.2.3** Smoke flavor.

### **5.1.3 Smoking materials**

Smoking materials shall include wood (including wood chips, shavings and sawdust) or other woody plants in their natural state. Wood or woody plants that have been impregnated, colored, gummed or painted or treated in a similar manner shall be excluded. The materials shall be free from microbiological deterioration and visible fungal growth.

## **5.2 Quality and safety criteria**

### **5.2.1 Chemical and sensory properties**

Hot and cold smoked fish shall conform to the following characteristics:

#### **5.2.1.1 Histamine content**

The histamine content of the product shall not be more than 200 ppm.

#### **5.2.1.2 Sensory properties**

Smoked fish shall have the characteristic taste, smoked flavor and aroma, firm texture and color which depend on the species of fish and the smoking process used. The product shall be free from any off-flavors or off-odors that may indicate the onset of rancidity or microbial spoilage.

#### **5.2.2 Microbiological limits**

The microbiological limits for the product shall be in accordance with the **BFAD BC 01-A-Guidelines for the Assessment for the Microbiological Quality of Processed Foods** as shown in Table 1.

**Table 1 – Microbiological limits for smoked fish**

<b>Test/Microorganism</b>	<b>n</b>	<b>c</b>	<b>m</b>	<b>M</b>
SPC/APC, cfu/g	5	2	$5 \times 10^5$	$10^7$
<i>Salmonella</i> /25 g	5	0	0	
<i>E. coli</i> , MPN/g	5	3	11	$\leq 500$
<i>Staph. aureus</i> (coagulase +), cfu/g	5	2	$10^2$	$10^4$

Legend:

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

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

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

c - maximum allowable number of defective or marginally acceptable samples

## 6 Defects

### 6.1 Types of defects

#### 6.1.1 Foreign matters

The presence in the sample unit of any matter which: has not been derived from either the components or constituents of the fish, salt and other ingredients used in the product and listed in Subsection 4.1; does not pose a threat to human health and can be 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.

#### 6.1.2 Appearance

6.1.2.1 Evidence or presence of parasites and insect infestation.

6.1.2.2 Presence of mold growth and slime.

6.1.2.3 Presence of blood stains and traces of internal organs, where applicable.

6.1.2.4 Textural breakdown of the product characterized by detaching of fish heads and bursting of bellies.

6.1.2.5 Mechanical damage like tears and deformations.



**6.1.3 Odor and flavor**

Persistent, distinct and objectionable odor or flavor indicative of decomposition or putrefaction like sour, rancid or stale odors and flavors, not characteristic of the fish species presented in the product.

**6.1.4 Texture**

Mushy, crumbly or tough flesh not characteristic of the fish species presented in the product.

**6.2 Classification of “defectives”**

A container whose contents exhibit any of the defects described in subsections 6.1.1 to 6.1.4 and, which exceeds the acceptance number prescribed in the appropriate sampling plan (Annex D) shall be considered as “defective”.

**7 Lot acceptance**

A lot shall be considered acceptable when it complies with the applicable safety and quality criteria as prescribed in Sub-section 5.2 and does not exhibit any of the defects described in sub-section 6.1 or does not exceed the allowable limit for the acceptance number of the appropriate sampling plan (Annex D).

**8 Food additives**

Food additives when used shall be in accordance with the regulations as prescribed by the Bureau of Food and Drugs (BFAD) under Bureau Circular No. 016, s.2006: Updated List of Food Additives) and/or by the Codex Alimentarius Commission.

**9 Hygiene**

**9.1** The product covered by the provisions of this standard shall be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1 – 1969, Rev. 4-2003), Recommended International Code of Practice for Smoked Fish (CAC/RCP 25-1979) and/or the A.O. No. 153 s. 2004 - Guidelines, Current Good Manufacturing Practices in Manufacturing, Packing, Repacking or Holding Food and, processed according to the Recommended Code of Practice for the Processing of Smoked Fish (PNS/FDA 27:2010).

**9.2** When tested by appropriate methods of sampling and examination, the product:

**9.2.1** shall be free from filth that may pose a hazard to health;

**9.2.2** shall be free from parasites, which may represent a hazard to health;

**9.2.3** shall not contain any substance originating from microorganisms in amounts, which may represent a hazard to health; and

**9.2.4** shall be free from spoilage or pathogenic microorganisms capable of survival and multiplication under normal conditions of storage.

## **10 Packaging and labeling**

**10.1** Retail packs in primary packaging shall contain only one and the same species of fish. Bulked packed products in secondary packaging may contain two or more units of retail packs.

**10.2** The product shall be packed in suitable, hygienic primary and secondary packages that can maintain its quality and safety during storage and transport.

**10.3** The net weight of any sample unit shall be in accordance with **BFAD Permissible Net Content Variation in Prepackaged Food (BFAD B.C. No. 6-A s. 1998)**.

**10.4 Labeling of retail packages/container** – Each retail container shall be labeled and marked in accordance with current BFAD Labeling Regulations (**BFAD A.O. No. 88-B s. 1984 - Rules and Regulation Governing the Labeling of Prepackaged of Food Products Distributed in the Philippines**), and shall contain the following information:

**10.4.1** The name of the product. The name of the product shall be “Cold Smoked Fish” or “Hot Smoked Fish” or “Smoked Fish”, in which the word fish may be replaced by the corresponding English or common name of the fish species (e.g., Smoked Milkfish, Hot Smoked Milkfish, Cold Smoked Milkfish, Cold Smoked *Bangus*, or Hot Smoked *Bangus*). The local generic name for hot smoked fish, which is *tinapa*, may also be used.

**10.4.2** The name and the address of the manufacturer, packer, distributor, importer, exporter or vendor of the food.

**10.4.3** The complete list of ingredients and food additives used in the preparation of the product in descending order of proportion.

**10.4.4** The net content by weight in the metric system. Other systems of measurement required by importing countries shall appear in parenthesis after the metric system unit.

**10.4.5** The words “Best/Consume Before/”Use by date” indicating end of period at which the product shall retain its optimum quality attributes at specified storage conditions.

**10.4.6** Storage instructions like “Keep Refrigerated” or Keep Frozen”.

**10.4.7** Lot identification marked in code identifying the product lot.

**10.4.8** The words "Product of the Philippines" or the country of origin if imported.

**10.4.9** Additional requirements

A pictorial representation of the fish on the label should not mislead the consumer with respect to the fish so illustrated.

**10.5 Labeling of non-retail, bulk containers**

The name of the product, lot identification code and the name and address of the manufacturer or packer shall appear in the container. However, the name and address of the manufacturer may be replaced by identification marks provided that such mark is clearly identified with accompanying documents.

**10.6 Nutrition labeling**

Nutrition labeling shall conform to the established regulations of the BFAD.

**11 Method of sampling and analysis**

**11.1 Method of sampling**

Sampling shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods CAC/RM 42-1969.

**11.2 Methods of analysis**

**11.2.1 Determination of histamine content**

According to the method of AOAC (2005, 18<sup>th</sup> Edition) using the Fluorometric Method or HPLC Method.

**11.2.2 Determination of net weight**

According to the procedure described in Annex F - Determination of Net Weight.

## Annex 1

## Species of finfishes utilized in the production of smoked fish

English name	Local name	Scientific name
<b>I. Mackerel and tuna species</b>		
1. Short bodied mackerel	<i>Hasa-hasa</i>	<i>Rastrelliger brachysoma</i>
2. Indian mackerel	<i>Alumahan</i>	<i>Rastrelliger kanagurta</i>
3. Striped mackerel	<i>Alumahan</i>	<i>Rastrelliger kanagurta</i>
4. Narrow-barred Spanish mackerel	<i>Tanigue, tanguigi</i>	<i>Scomberomorus commerson</i>
5. Bullet tuna	<i>Tulingan</i>	<i>Auxis rochei</i>
6. Frigate tuna	<i>Tulingan</i>	<i>Auxis thazard</i>
7. Yellowfin tuna	<i>Tambakol, bariles</i>	<i>Thunnus albacares</i>
8. Skipjack tuna	<i>Gulyasan, bariles</i>	<i>Katsuwonus pelamis</i>
<b>II. Sardine species</b>		
9. Smooth belly sardinella	<i>Tamban</i>	<i>Amblygaster leiogaster</i>
10. Indian oil sardines	<i>Tamban</i>	<i>Sardinella longiceps</i>
11. Fringe scaled or fimbriated sardines	<i>Tunsoy</i>	<i>Sardinella fimbriata</i>
12. White sardinella	<i>Tunsoy</i>	<i>Sardinella albella</i>
13. Round sardinella	<i>Lapad</i>	<i>Sardinella aurita</i>
14. Spotted sardinella	<i>Tamban, tunsoy</i>	<i>Amblygaster sirm</i>
15. Freshwater sardines	<i>Tawilis</i>	<i>Sardinella tawilis</i>
<b>III. Scad species</b>		
16. Short finned scad or round scad	<i>Galunggong</i>	<i>Decapterus macrosoma</i>
17. Japanese scad	<i>Galunggong</i>	<i>Decapterus maruadsi</i>
18. Mackerel scad	<i>Galunggong</i>	<i>Decapterus macarellus</i>
19. Big-eyed scad	<i>Matangbaka</i>	<i>Selar crumenophthalmus</i>
<b>IV. Mullet species</b>		
20. Flathead grey mullet	<i>Banak</i>	<i>Mugil cephalus</i>
21. Blackfinned mullet	<i>Kapak</i>	<i>Mugil meloneterus</i>
<b>V. Other commercial marine species</b>		
22. Crevalle	<i>Salay-salay</i>	<i>Caranx leptolepis</i>
23. Shortfinned or chacunda gizzard	<i>Kabasi</i>	<i>Anodontostoma chacunda</i>
24. Fusilier, Golden Caesio	<i>Dalagang bukid</i>	<i>Caesio spp.</i>
25. Lizardfish	<i>Kalaso</i>	<i>Saurida tumbil</i>
26. Manila sea catfish	<i>Kanduli</i>	<i>Arius manilensis</i>
27. Longfin trevally	<i>Talakitok</i>	<i>Caranoides armatus</i>
28. Big-eyed barracuda	<i>Torsillo, barracuda</i>	<i>Sphyraena barracuda</i>

English name	Local name	Scientific name
<b>VI. Freshwater and Brackish water species</b>		
29. Catfish	<i>Hito</i>	<i>Clarias bathracus</i>
30. Bengal eel	<i>Palos</i>	<i>Ophisternon bengalense</i>
31. Common carp	<i>Karpa</i>	<i>Cyprinus carpio carpio</i>
32. Fleshynout catfish	<i>Kanduli</i>	<i>Arius dispar</i>
33. Freshwater sardinella/sardines	<i>Tawilis/Hawo-hawo</i>	<i>Sardinella tawilis</i>
34. Giant gourami	<i>Goramy</i>	<i>Osphronemus goramy</i>
35. Goldie river mullet	<i>Banak</i>	<i>Cestraeus goldiei</i>
36. Milkfish	<i>Bangus</i>	<i>Chanos chanos</i>
37. Mozambique tilapia	<i>Tilapia</i>	<i>Oreochromis mossambicus</i>
38. Niletilapia	<i>Tilapia/Pla-pla</i>	<i>Oreochromis niloticus</i>
39. Sharp-nosed river mullet	<i>Banak</i>	<i>Cestraeus oxyrhynchus</i>
<p>Reference:</p> <p>Ganaden, S.R. and F. Lavapie-Gonzalez. 1999. <b>Common and Local Fishes Names of Marine Fishes of the Philippines</b>. Bureau of Fisheries and Aquatic Resources, Philippines. 386 pp.</p>		

## Annex 2

### Standard for iodized salt

#### 1. Scope

This standard applies to iodized salt used as condiment or an ingredient in the preparation of food in households, food service and food manufacturing establishments.

#### 2. Description

Iodized salt is food grade salt that contains the prescribed level of iodine. It shall be produced refined or unrefined (crude) salt obtained from underground rock salt deposits or by evaporation of seawater or natural brine. The finished product shall be in the form of solid crystal or powder, white in color, without visible spots of clay, sand, gravel or other foreign matter.

#### 3. Iodization process

**3.1** Salt may be iodized with potassium iodate (KIO<sub>3</sub>) or potassium iodide (KI) by means of any of the following methods:

- a) dry mixing of salt in powdered form
- b) dip feeding or spray mixing if salt is in crystal form
- c) submersion of ice crystals in iodated brine

#### 4. Essential composition and quality factors

To ensure the stability of iodine, salt to be iodized must conform with the following quality requirements:

Moisture, minimum	4 % for refined salt 7 % for unrefined salt
NaCl minimum	97 % dry basis
Calcium and magnesium, maximum	2 %
Water insolubles, maximum	0.2 %
Heavy meal contaminants	
Arsenic as As	0.5 mg/kg
Cadmium as Cd	0.5 mg/kg
Lead as Pb	2.0 mg/kg
Mercury as Hg	0.1 mg/kg

#### **4.1 Naturally present secondary products and contaminants in raw salt**

Notwithstanding the purity requirements in section 4.1. the raw salt may naturally contain secondary products, which are present in varying amounts depending on the origin and method of production of salt, and which are composed mainly of calcium, potassium, magnesium and sodium sulphates, carbonates, bromides and of calcium, potassium chlorides as well as natural contaminant may also be present in amounts varying with the origin and method of production of the salt.

### **5. Labelling**

**5.1** Iodized salt for commercial distribution shall carry appropriate labelling in accordance with BFAD rules and regulations on labelling of prepackaged foods. Specifically, the following information shall be declared in every container of iodized salt whether in bulk or retail package.

#### **5.1.1 For locally produced iodized salt**

- a) The name of the product, "IODIZED SALT", printed in bold capital letters
- b) Name and address of manufacturer
- c) Net weight
- d) Iodine compound used
- e) Chemical additives, e.g. anti-caking agents, emulsifiers
- f) Open date marking, e.g. "Best Before" or "Consume Before" Date
- g) Lot identification code (replacers must use manufacturer's lot i.d code)
- h) Storage Instruction: STORE IN COOL DRY PLACE

#### **5.1.2 For imported iodized salt**

- a) same as 5.1.1 (a), (c) to (h)
- b) Name and address of Importer/Local Distributor
- c) Country of Origin

### **5.2 Labelling of non-retail containers**

In the case of non-retail containers of at least 25 kg of iodized salt, the labelling information required in sections 5.1.1. (b), (d) or in 5.1.2 (b) may not be declared if such bulk packages are intended for delivery to distributors of food manufacturers/institutional users, provided every shipment or delivery is accompanied by a document containing all information in 5.1.1. or 5.1.2.

### **5.3 Iodine levels based on WHO recommendation**

In order to meet national needs, the prescribed levels of iodized salt be indicated below:

	Type of container	Packages
Sampling point	Bulk (>2 kg)	Retail (<2 kg)
Production site	70-150 g/kg	60-100 mg/kg
Port of entry*	70-150 mg/kg	60-100 mg/kg
Retail site	> 50 mg/kg	> 40 mg/kg
* For imported iodized salt, also at importer's/distributor warehouse		

## 6. Food additives

6.1 All additives used, including KIO and KI, and shall be of food grade quality and shall conform to the specifications prescribed by JECFA of the Food Chemicals Codex.

### 6.1.1 Anti-caking agents

Maximum level in the final product

6.1.1.1	Coating agents; Carbonate. ) Calcium/magnesium, Magnesium ) oxide; Phosphate, Tricalcium; Silicon ) dioxide, amorphous; Silicates, ) calcium, magnesium, sodium ) aluminum or sodium or sodium calcium ) aluminum	20 g/kg singly or in Combination
6.1.1.2	Coating hydrophobic agents, ) aluminum, calcium, magnesium, ) potassium or sodium salts of myristic, ) palmitic or stearic acid )	
6.1.1.3	Crystal modifiers: ferrocyanide, ) calcium, potassium combination or ) sodium )	10 mg/kg singly or in combination, expressed as {Fe(CN)}
6.1.2	Emulsifiers Polysorbate 80	10 mg/kg
6.1.3	Processing Aid ) Dimethylpolysiloxane )	10 mg of residue/kg

## 7. Packaging

All iodized salt shall be packed in woven propylene bags, clean and unused jute bags, or other non-porous material with a lining of high density polyethylene to ensure the retention of appropriate iodine level at the time of consumption.



**8. Storage, transport and display at retail**

In order to minimize avoidable losses of iodine, iodized salt shall not be exposed to any of the following conditions during storage, transport and display at retail outlets:

- a) direct sunlight or near source of strong light
- b) high temperature and humidity
- c) contamination with moisture, e.g. rain, flood, etc.
- d) contamination with dust or filth from the environment

**Reference: Republic Act No. 8172: An Act Promoting Salt Iodization Nationwide and for Related Purposes and Its Implementing Rules and Regulations. Published by the National Nutrition Council, 1996.**

## Annex 3

**Standard parameters and values for drinking water**

Philippine National Standards for Drinking Water 2007 (DOH AO 2007-0012)

**Table 1 – Standard values for bacteriological quality**

Parameter	Value/Unit	Point of compliance
Total coliform	< 1.1 MPN/100 ml	Service reservoir Water treatment works Consumers' taps Refilling stations Water haulers Water vending machines
Fecal coliform	< 1.1 MPN/100 ml	Service reservoir Water treatment works Consumers' taps Refilling stations Water haulers Water vending machines Point sources - Level 1
Heterotropic plate count	< 500 CFU/ml	Service reservoir Water treatment works Consumers' taps nearest meter Refilling stations Water vending machines

**Table 2 – Standard values for physical and chemical quality for acceptability aspects for drinking water**

Constituents	Maximum level (mg/L) or Characteristic	Constituents	Maximum level (mg/L) or Characteristic
Taste	No objectionable taste	Hydrogen sulfide	0.05
Odor	No objectionable odor	Iron	1.0
Color	Apparent = 10 color units True = 5 color units	Manganese	0.4
Turbidity	3 NTU	pH	6.5 – 8.5
Aluminum	0.2	Sodium	200
Chloride	250	Sulfate	250
Copper	1.0	Total dissolved solids	500
Hardness	300 as CaCO <sub>3</sub>	Zinc	5.0

**Table 3 – Standard values for organic and inorganic chemical constituents of health significance in drinking water**

<b>Inorganic chemical</b>	<b>Constituents</b>	<b>Maximum level (mg/L)</b>	<b>Constituents</b>	<b>Maximum level (mg/L)</b>
	Antimony	0.02	Fluoride	1.0
	Arsenic	0.05	Lead	1.01
	barium	0.7	Mercury (total)	0.001
	Boron	0.5	Nickel	0.02
	Cadmium	0.003	Nitrate	50
	Chromium (Total)	0.05	Nitrite	3.0
	Cyanide (Total)	0.07	Selenium	0.01
<b>Organic chemical</b>	<b>Constituents</b>	<b>Maximum level (mg/L)</b>	<b>Constituents</b>	<b>Maximum level (mg/L)</b>
	<b>Benzene</b>	0.01	Ethylbenzene	0.30
	Carbon tetrachloride	0.004	Nitritotriacetic acid (NTA)	0.20
	1,2-Dichlorobenzene	0.1	Polyaromatic hydrocarbons (PAHs)	0.20
	1,4-Dichlorobenzene	0.5	Polynuclear aromatic	0.0007
	1,2-Dichloroethane	0.003	Tetrachloroethene	0.02
	1,1-Dichloroethene	0.05	Styrene	0.04
	1,2-Dichloroethene	0.07	Tetrachloroethene	0.70
	Dichloromethane	1.0	Trichloroethene	0.07
	Di(2-ethylhexyl) phthalate	1.01	Vinyl chloride	0.0003
	Edetic acid (ADTA)	0.001	Xylene	0.5
<b>Organic pesticide</b>	<b>Constituents</b>		<b>Maximum level (ug/L)</b>	<b>Status in the Philippines</b>
	Aldrin and Dieldrin (combined)		30.0	Banned
	Atrazine		0.03	Registered
	Carbofuran		2.0	Registered
	Chlordane		7.0	Banned
	DDT **		0.2	Banned
	1,2-Dibromo-3-chloropropane (DBCP)		1.0	Banned
	2,4-Dichlorophenoxyacetic acid (2,4-D)		1.0	Registered
	Endrin		30.	Banned
	1,2-Dibromomethane (Ethylene dibromide)		0.6	Banned
	Heptachlor and Heptachlor epoxide (combined)		0.03	Banned
	Lindane		2.0	Restricted
	MCPA (4-(2-methyl-4-chloro) phenoxy) acetic acid		2.0	Registered
	Pendimethalin		20.0	Registered
	Pentachlorophenol (PCP)		9.0	Banned

## Annex 4

**Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL 6.5)  
(CAC/RM 42-1969)**

**Sampling plan no. 1 – Normal operations  
Inspection level 1, AQL 6.5)**

1. Net weight:  $\leq 1$  kg

Lot size (N)	Sample size	Acceptance number (C)
4,800 or less	6	1
4,801 – 24,000	13	2
24,001 – 48,000	21	3
48,001 – 84,000	29	4
94,001 – 144,000	48	6
144,001 – 240,000	84	9
More than 240,000	126	13

2. Net weight:  $>1$  kg  $\geq 4.5$  kg

Lot size (N)	Sample size	Acceptance number (C)
2,400 or less	6	1
2,401 – 15,000	13	2
15,001 – 24,000	21	3
24,001 – 42,000	29	4
42,001 – 72,000	48	6
72,001 – 120,000	84	9
More than 120,000	126	12

3. Net weight  $> 4.5$ kg

Lot size (N)	Sample size	Acceptance number (C)
600 or less	1	1
601 – 2,000	13	2
2,001 – 7,200	21	3
7,201 – 15,000	29	4
15,001 – 24,000	48	6
24,001 – 42,000	84	9
More than 42,000	126	13

**Sampling plan no. 2 - In case of disputes  
Inspection level 2, AQL 6.5)**

**1. Net weight:  $\geq 1$ kg**

<b>Lot size (N)</b>	<b>Sample size</b>	<b>Acceptance number (C)</b>
4,800 or less	13	2
4,801 – 24,000	21	3
24,001 – 48,000	29	4
48,001 – 84,000	48	6
94,001 – 144,000	84	9
144,001 – 240,000	126	13
More than 240,000	200	19

**2. Net weight:  $>1$  kg  $\geq 4.5$  kg**

<b>Lot size (N)</b>	<b>Sample size</b>	<b>Acceptance number (C)</b>
2,400 or less	13	2
2,401 – 15,000	21	3
15,001 – 24,000	29	4
24,001 – 42,000	48	6
42,001 – 72,000	84	9
72,001 – 120,000	126	13
More than 120,000	200	19

**3. Net weight  $> 4.5$ kg**

<b>Lot size (N)</b>	<b>Sample size</b>	<b>Acceptance number (C)</b>
600 or less	13	2
601 – 2,000	21	3
2,001 – 7,200	29	4
7,201 – 15,000	48	6
15,001 – 24,000	84	9
24,001 – 42,000	126	13
More than 42,000	200	19

Source: Codex Alimentarius Sampling Plans for Prepackaged Foods - CAC/RM 42-1969, Codex Alimentarius Volume 13.

## **Annex 5**

### **Determination of net weight**

#### **1. Apparatus:**

Weighing balance (sensitivity: 0.10 gram)

#### **2. Procedure:**

**2.1** Weigh the sample unit on its original sample packed container. This is the gross weight.

**2.2** Open and pour out the contents of each individual package. Wash the empty package and blot dry.

**2.3** Weigh out the washed empty package. This is the weight of the packaging material.

**2.4** Subtract the weight of the empty package from the gross weight. The resulting figure is the net weight of the individual package (net weight = gross weight – weight of packaging).

**2.5** Average the results from all package of a sample representing a lot. Report result as the average net weight of the product.

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PNS/FDA 26:2010

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