参考資料１

CODEX STANDARD FOR NATURAL MINERAL WATERS

CODEX STAN 108 - 1981, Rev. 1 – 1997[1]

1. SCOPE

This standard applies to all packaged natural mineral waters offered for sale as food. It does not apply to natural mineral waters sold or used for other purposes.

2. DESCRIPTION

2.1 DEFINITION OF NATURAL MINERAL WATER

Natural mineral water is a water clearly distinguishable from ordinary drinking water because:

a) it is characterized by its content of certain mineral salts and their relative proportions and the presence of trace elements or of other constituents;

b) it is obtained directly from natural or drilled sources from underground water bearing strata for which all possible precautions should be taken within the protected perimeters to avoid any pollution of, or external influence on, the chemical and physical qualities of natural mineral water;

c) of the constancy of its composition and the stability of its discharge and its temperature, due account being taken of the cycles of minor natural fluctuations;

d) it is collected under conditions which guarantee the original microbiological purity and chemical composition of essential components;

e) it is packaged close to the point of emergence of the source with particular hygienic precautions;

f) it is not subjected to any treatment other than those permitted by this standard.

2.2 SUPPLEMENTARY DEFINITIONS

2.2.1 Naturally Carbonated Natural Mineral Water

A ***naturally carbonated natural mineral water*** is a natural mineral water which, after possible treatment in accordance with Section 3.1.1 and re-incorporation of gas from the same source and after packaging taking into consideration usual technical tolerance, has the same content of carbone dioxide spontaneously and visibly given off under normal conditions of temperature and pressure.

2.2.2 Non-Carbonated Natural Mineral Water

A ***non-carbonated natural mineral water*** is a natural mineral water which, by nature and after possible treatment in accordance with Section 3.1.1 and after packaging taking into consideration usual technical tolerance, does not contain free carbon dioxide in excess of the amount necessary to keep the hydrogen carbonate salts present in the water dissolved.

2.2.3 Decarbonated Natural Mineral Water

A ***decarbonated natural mineral*** is a natural mineral water which, after possible treatment in accordance with Section 3.1.1 and after packaging, has less carbon dioxide content than that at

[1] Amended in 2001

emergence and does not visibly and spontaneously give off carbon dioxide under normal conditions of termperature and pressure.

2.2.4 Natural Mineral Water Fortified with Carbon Dioxide from the Source

A ***natural mineral water fortified with carbon dioxide from the source*** is a natural mineral water which, after possible treatment in accordance with Section 3.1.1 and after packaging, has more carbon dioxide content than that at emergence.

2.2.5 Carbonated Natural Mineral Water

A ***carbonated natural mineral water*** is a natural mineral water which, after possible treatment in accordance with Section 3.1.1 and after packaging, has been made effervescent by the addition of carbon dioxide from another origin.

2.3 AUTHORIZATION

Natural mineral water should be recognized as such by the responsible authority of the state, in which the natural mineral water has emerged.

3. COMPOSITION AND QUALITY FACTORS

3.1 TREATMENT AND HANDLING

3.1.1

Treatments permitted include separation from unstable constituents, such as compounds containing iron, manganese, sulphur or arsenic, by decantation and/or filtration, if necessary, accelerated by previous aeration.

3.1.2

The treatments provided for in Sections 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5 and 3.1.1 above may only be carried out on condition that the mineral content of the water is not modified in its essential constituents, which give the water its properties.

3.1.3

The transport of natural mineral waters in bulk containers for packaging or for any other process before packaging is prohibited.

3.2 HEALTH-RELATED LIMITS FOR CERTAIN SUBSTANCES

Natural mineral water in its packaged state shall contain not more than the following amounts of the substances indicated hereunder:

3.2.1	Antimony	0.005 mg/l
3.2.2	Arsenic	0.01 mg/l, calculated as total As
3.2.3	Barium	0.7 mg/l
3.2.4	Borate	5 mg/l, calculated as B
3.2.5	Cadmium	0.003 mg/l
3.2.6	Chromium	0.05 mg/l, calculated as total Cr
3.2.7	Copper	1 mg/l
3.2.8	Cyanide	0.07 mg/l
3.2.9	Fluoride	See section 6.3.2
3.2.10	Lead	0.01 mg/l
3.2.11	Manganese	0.5 mg/l
3.2.12	Mercury	0.001 mg/l
3.2.13	Nickel	0.02 mg/l
3.2.14	Nitrate	50 mg/l, calculated as nitrate
3.2.15	Nitrite	0.02 mg/l as nitrite[2]
3.2.16	Selenium	0.01 mg/l

The following substances shall be below the limit of quantification[3] when tested, in accordance with the methods prescribed in Section 7:

3.2.17 ***Surface active agents*** [4]

3.2.18 ***Pesticides and PCBs***[4]

3.2.19 ***Mineral oil***[4]

3.2.20 ***Polynuclear aromatic hydrocarbons***[4]

4. HYGIENE

4.1

It is recommended that the products covered by the provisions of this standard be prepared in accordance with the applicable sections of the *Recommended International Code of Practice - General Principles of Food Hygiene* (CAC/RCP 1-1969, Rev. 3-1997), and in accordance with the *Recommended International Code of Practice for the Collecting, Processing and Marketing of Natural Mineral Waters* (CAC/RCP 33-1985).

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2 Set as a quality limit (except for infants).

3 As stated in the relevant ISO methods.

4 Temporarily endorsed pending elaboration of appropriate method(s) of analysis.

4.2

The source or the point of emergence shall be protected against risks of pollution.

4.3

The installations intended for the production of natural mineral waters shall be such as to exclude any possibility of contamination. For this purpose, and in particular:

a) the installations for collection, the pipes and the reservoirs shall be made from materials suited to the water and in such a way as to prevent the introduction of foreign substances into the water;

b) the equipment and its use for production, especially installations for washing and packaging, shall meet hygienic requirements;

c) if, during production it is found that the water is polluted, the producer shall stop all operations until the cause of pollution is eliminated;

d) the observance of the above provisions shall be subject to periodic checks in accordance with the requirements of the country of origin.

4.4 MICROBIOLOGICAL REQUIREMENTS

During marketing, natural mineral water:

a) shall be of such a quality that it will not present a risk to the health of the consumer (absence of pathogenic microorganisms);

b) furthermore it shall be in conformity with the following microbiological quality specifications:

FIRST EXAMINATION			DECISION
E. coli or thermotolerant coliforms	1 x 250 ml	}	must not be detectable in any sample
Total coliform bacteria	1 x 250 ml	}	if ≥ 1 or ≤ 2
Fecal *streptococci*	1 x 250 ml	}	$\Rightarrow$ a second examination is carried out
Pseudomonas aeruginosa	1 x 250 ml	}	if > 2
Sulphite-reducing anaerobes	1 x 50 ml	}	$\Rightarrow$ rejected

SECOND EXAMINATION				
	n	c[5]	m	M
Total coliform bacteria	4	1	0	2
Fecal *streptococci*	4	1	0	2
Sulphite-reducing anaerobes	4	1	0	2
Pseudomonas aeruginosa	4	1	0	2

Second examination shall be done using the same volumes as for the first examination.

n: number of sample units from a lot that must be examined to satisfy a given sampling plan

c: the maximum acceptable number, or the maximum allowable number of sample units that may exceed the microbiological criterion m. When this number is exceeded, the lot is rejected.

m: the maximum number or level of relevant bacteria/g; values above this level are either marginally acceptable or unacceptable.

M: a quantity that is used to separate marginally acceptable quality from unacceptable quality foods. Values at or above M in any sample are unacceptable relative to either health hazard, sanitary indicators, or spoilage potential.

5. PACKAGING

Natural mineral water shall be packed in hermetically sealed retail containers suitable for preventing the possible adulteration or contamination of water.

6. LABELLING

In addition to the *Codex General Standard for the Labelling of Prepackaged Foods* (CODEX STAN 1-1985, Rev. 1-1991), the following provisions shall apply:

6.1 THE NAME OF THE PRODUCT

6.1.1

The name of the product shall be "*natural mineral water*".

6.1.2

The following designations shall be used in accordance with Section 2.2 and may be accompanied by suitable descriptive terms (e.g., still and sparkling):

- Naturally carbonated natural mineral water;
- Non-carbonated natural mineral water;
- Decarbonated natural mineral water;
- Natural mineral water fortified with carbon dioxide from the source;
- Carbonated natural mineral water.

[5] Results of the first and second examinations.

6.2 NAME AND ADDRESS

The location of the source and the name of the source shall be declared.

6.3 ADDITIONAL LABELLING REQUIREMENTS

6.3.1 Chemical Composition

The analytical composition giving characteristics to the product shall be declared in the labelling.

6.3.2

If the product contains more than 1 mg/l of fluoride, the following term shall appear on the label as part of, or in close proximity to, the name of the product or in an otherwise prominent position: "*contains fluoride*". In addition, the following sentence should be included on the label: "*The product is not suitable for infants and children under the age of seven years*" where the product contains more than 2 mg/l fluorides.

6.3.3

If a natural mineral water has been submitted to a treatment in accordance with sub-section 3.1.1, the result of the treatment shall be declared on the label.

6.4 LABELLING PROHIBITIONS

6.4.1

No claims concerning medicinal (preventative, alleviative or curative) effects shall be made in respect of the properties of the product covered by the standard. Claims of other beneficial effects related to the health of the consumer shall not be made unless true and not misleading.

6.4.2

The name of the locality, hamlet or specified place may not form part of the trade name unless it refers to a natural mineral water collected at the place designated by that trade name.

6.4.3

The use of any statement or of any pictorial device which may create confusion in the mind of the public or in any way mislead the public about the nature, origin, composition and properties of natural mineral waters put on sale is prohibited.

7. METHODS OF ANALYSIS AND SAMPLING

See *Codex Alimentarius*, Volume 13.

GENERAL STANDARD FOR BOTTLED/PACKAGED DRINKING WATERS (OTHER THAN NATURAL MINERAL WATERS)

CODEX STAN 227-2001

1. SCOPE

This Standard applies to waters for drinking purposes other than Natural Mineral Waters as defined in the Revised Codex Standard CODEX STAN 108-1981, Rev.1-1997, that are prepackaged/bottled[1] and are suitable for human consumption.

2. DESCRIPTION

2.1 PACKAGED WATERS

"***Packaged waters***", other than natural mineral waters, are waters for human consumption and may contain minerals, naturally occurring or intentionally added; may contain carbon dioxide, naturally occurring or intentionally added; but shall not contain sugars, sweeteners, flavourings or other foodstuffs.

2.1.1 Waters Defined by Origin

"***Waters defined by origin***", whether they come from the underground or from the surface, defined under the present standard share the following characteristics:

a) they originate from specific environmental resources without passing through a community water system;
b) precautions have been taken within the vulnerability perimeters to avoid any pollution of, or external influence on, the chemical, microbiological and physical qualities of water at origin;
c) collecting conditions which guarantee the original microbiological purity and essential elements of their chemical make-up at origin;
d) from the microbiological standpoint, are constantly fit for human consumption at their source and are kept in that state with particular hygienic precautions until and while packaging in accordance with provisions of sections 3 and 4;
e) are not subject to any modification or treatment other than those permitted under Section 3.1.1

2.1.2 Prepared Waters

"***Prepared waters***" are waters that do not comply with all the provisions set for waters defined by origin under subsection 2.1.1. They may originate from any type of water supply.

[1] As defined in *Codex General Standard for the Labelling of Prepackaged Foods*: "prepackaged foods to be offered as such to consumer or for catering purposes".

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 MODIFICATIONS AND HANDLING OF PACKAGED WATERS

3.1.1 Permitted physicochemical modifications and antimicrobial treatments for the waters defined by origin.

Waters defined by origin must not, prior to packaging, be modified or subjected to treatments other than those described in subsections below with the proviso that these modifications or treatments and the processes[2] used to achieve them do not change the essential physicochemical characteristics nor compromise the chemical, radiological and microbiological safety of these waters when packaged:

3.1.1.1. Selective treatments that modify the original composition:

- reduction and/or elimination of dissolved gases (and resulting possible change in pH);
- addition of carbon dioxide (and resulting change in pH) or re-incorporation of the original carbon dioxide present at emergence;
- reduction and/or elimination of unstable constituents such as iron, manganese, sulphur (as S^0 or S^-) compounds and carbonates in excess, under normal conditions of temperature and pressure, of the calco-carbonate equilibrium;
- addition of air, oxygen or ozone on condition that the concentration of by-products resulting from the ozone treatment is below the tolerance established under section 3.2.1;
- decrease and/or increase in temperature;
- reduction and/or separation of elements originally present in excess of maximum concentrations or of maximum levels of radioactivity set according to section 3.2.1.

3.1.1.2. Antimicrobial treatments for the waters defined by origin

Antimicrobial treatments may be used singly or in combination solely in order to conserve the original microbiological fitness for human consumption, original purity and safety of waters defined by origin.

3.1.2 Physical and chemical modifications and antimicrobial treatments for prepared waters

Prepared waters can be subjected to any microbial treatments and any treatments that modify the physical and chemical characteristics of the original water on condition that such treatments result in prepared waters that comply with all provisions of section 3.2 and 4 regarding the chemical, microbiological and radiological safety requirements for pre-packaged waters.

3.2 CHEMICAL AND RADIOLOGICAL QUALITY OF PACKAGED WATERS

3.2.1 Health-related Limits for Chemical and Radiological Substances

No packaged water shall contain substances or emit radioactivity in quantities that may be injurious to health. To this effect, all packaged water shall comply with the health-related requirements of the most recent "*Guidelines for Drinking Water Quality*" published by the World Health Organization.

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[2] These processes include the techniques listed in Section 4.1 of the *Code of Hygienic Practice for Bottled/Packaged Drinking Waters (Other Than Natural Mineral Waters)* with the proviso that such techniques comply with the provisions outlined in Section 3.2.1 of the present standard.

3.2.2 Addition of minerals

Any addition of minerals to water before packaging must comply with the provisions outlined in the present standard and, where applicable, with the provisions in *the Codex General Standard for Food Additives* (STAN 192-1995, Rev. 1-1997) and/or the *Codex General Principles for the Addition of Essential Nutrients to Foods* (CAC/GL 9-1987).

4. HYGIENE

4.1 CODE OF PRACTICE

It is recommended that all waters covered by the provisions of this standard be collected, transported, stored, and if applicable treated, and packaged in accordance with the *Recommended International Code of Practice – General Principles of Food Hygiene* (CAC/RCP 1-1991 , Rev. 3-1997) and in accordance with *the Code of Hygienic Practice for Bottled/Packaged Drinking Waters (other than Natural Mineral Waters)* (CAC/RCP 48-2001).

4.2 APPROVAL AND INSPECTION OF THE SOURCE FOR WATERS DEFINED BY ORIGIN

Initial approval or inspection of the source of waters defined by origin should be based upon appropriate scientific study adapted to the type of resource (hydrogeology, hydrology, etc.) and based on field survey of the source and of the recharge zone that shall demonstrate the safety of the source, the facilities and collection operations. The initial inspection of the source must be confirmed on a regular basis by periodic monitoring of the essential constituents, temperature, flow (in the case of natural springs) and the chemical and radiological factors specified under section 3.2.1 and the microbiological standards established in conformity with the latest "*Guidelines for Drinking Water Quality*" published by the World Health Organization. The results of source inspection should be made available to the importing country upon request.

5. LABELLING REQUIREMENTS

In addition to the *Codex General Standard for the Labelling of Prepackaged Foods* (CODEX STAN 1-1985, Rev.1-1991), the following provisions shall apply:

5.1 NAME OF THE PRODUCT

Countries may select appropriate names for products, to be specified in national legislation, that reflect local consumer expectations arising from cultural and traditional practices.

However, in establishing such labelling requirements, consideration should be given to ensuring that any product complying with this standard may be represented in a way that reflects its classification within the standard and that consumers are not misled.

5.1.1

The name of the product shall be as follows, depending on its classification in accordance with Section 2.1.

5.1.1.1. Waters defined by origin

Any appropriate name (or names) in the case of waters that comply with the criteria described under section 2.1.1 and that meet additional criteria established by each country including restricting the name of such water to certain names or only one name. In the case of blends or mixtures of waters from different environment resources, each resource shall be labelled.

Only waters defined by origin, in accordance with the present standard, can be represented by names that refer to the origin or give an impression of specific origin. The names used or chosen by the countries, in accordance with the present standard, to represent prepared waters cannot apply to waters defined by origin and vice versa. When applicable, the additional criteria established by the countries for the definition of the chosen names cannot contravene the provisions of the present standard.

5.1.1.2. Prepared waters

Any appropriate name (or names) to designate prepared waters described under section 2.1.2 and that meet additional criteria established by each country including restricting the name of such water to certain names or only one name.

5.1.2 Carbonation

5.1.2.1.

The following respective declarations should appear on the label in accordance with the following criteria:

In the case of ground waters defined by origin, "*naturally carbonated*" or "*naturally sparkling*" if, after packaging, carbon dioxide spontaneously and visibly is given off under normal conditions of temperature and pressure and the carbon dioxide originates from the source at emergence and is present at the same level as was present originally at emergence, with a possible re-incorporation of gas from the same source, taking into consideration a technical tolerance of ± 20 %.

In the case of ground waters defined by origin, "*fortified with carbon dioxide*" if, after packaging, carbon dioxide spontaneously and visibly is given off under normal conditions of temperature and pressure and the carbon dioxide originates from the source at emergence but is present at a level at least 20% higher than the quantity present originally at emergence, with a possible re-incorporation of gas from the same source.

In the case of all waters, "*carbonated*" or "*sparkling*" if, after packaging, carbon dioxide spontaneously and visibly is given off under normal conditions of temperature and pressure and the carbon dioxide does not entirely originate from the same source as that of the water at emergence.

5.1.2.2.

Words such as "*non carbonated*" or "*non sparkling*" or "*still*" may apply if, after packaging, there is no visible and spontaneous release of carbon dioxide under normal conditions of temperature and pressure when the packaged is opened.

5.2 Additional Labelling Requirements

5.2.1 Chemical composition

The total dissolved solid content of packaged waters may be declared on the principal display panel. With regard to waters defined by origin, the chemical composition that confers the characteristics to the product may also be declared on the label.

5.2.2 Geographic location

Where required by the authorities having jurisdiction, the precise geographic location of the specific environmental resource and/or the source of a water defined by origin must be declared in the manner prescribed in the applicable legislation.

5.2.3 Prepared Water from a Water Distribution System

When prepared water is supplied by a public or private tap water distribution system and subsequently packaged/bottled, but has not undergone further treatment that would modify its original composition or to which carbon dioxide or fluoride have been added, the wording *"From a public or private distribution system"* must appear on the label along with the name of the product on the principal display panel.

5.2.4 Treatments

Where required by the authorities having jurisdiction, if a packaged/bottled water has been modified by a permitted treatment before packaging, the modification or the result of the treatment must be declared on the label in a manner prescribed in the applicable legislation.

5.3 LABELLING PROHIBITIONS

5.3.1

No claims concerning medicinal (preventive, alleviative or curative) effects shall be made in respect of the properties of the product covered by this standard. Claims of other beneficial effects related to the health of the consumer shall not be made unless true and not misleading.

5.3.2

The name of the locality, hamlet or specified place may not form part of the trade name unless it refers to a water defined by origin collected at the place designated by that trade name.

5.3.3

The use of any statement or of any pictorial device which may create confusion in the mind of the public or in any way mislead the public about the nature, origin, composition and properties of packaged waters put on sale is prohibited.

6. METHODS OF ANALYSIS AND SAMPLING

See *Codex Alimentarius* Volume 13.