

# CODEX STANDARD FOR NATURAL MINERAL WATERS

CODEX STAN 108-1981

## 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 carbon 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 emergence and does not visibly and spontaneously give off carbon dioxide under normal conditions of temperature 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

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#### 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 <sup>1</sup>             |
| 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 | 0.4 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   | 0.1 mg/l as nitrite               |
| 3.2.16 | Selenium  | 0.01 mg/l                         |

The following substances shall be below the limit of quantification<sup>2</sup> when tested, in accordance with the methods prescribed in Section 7:

- 3.2.17 Surface active agents<sup>3</sup>
- 3.2.18 Pesticides and PCBs<sup>3</sup>

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<sup>1</sup> Pending further review of new scientific evidence by an appropriate scientific body to be determined by FAO/WHO.

<sup>2</sup> As stated in the relevant ISO methods.

<sup>3</sup> Temporarily endorsed pending elaboration of appropriate method(s) of analysis.

3.2.19 Mineral oil<sup>3</sup>

3.2.20 Polynuclear aromatic hydrocarbons<sup>3</sup>

#### 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), and in accordance with the *Recommended International Code of Practice for the Collecting, Processing and Marketing of Natural Mineral Waters* (CAC/RCP 33-1985).

**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

<i>E. coli</i> or thermotolerant	1 × 250 ml	must not be detectable in any sample
Total coliform bacteria	1 × 250 ml	if $\geq 1$ or $\leq 2$ <input type="checkbox"/> a second examination is carried out
Fecal <i>streptococci</i>	1 × 250 ml	
<i>Pseudomonas aeruginosa</i>	1 × 250 ml	if > 2 <input type="checkbox"/> rejected
Sulphite-reducina	1 × 50 ml	

Second examination	<i>n</i>	<i>c</i> <sup>4</sup>	<i>m</i>	<i>M</i>
Total coliform bacteria	4	1	0	2
Fecal <i>streptococci</i>	4	1	0	2
Sulphite-reducing anaerobes	4	1	0	2
<i>Pseudomonas aeruginosa</i>	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), 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.

### 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 1.5 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**

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See relevant Codex texts on methods of analysis and sampling.