

INTRODUCTION

The Recommended International Code of Hygienic Practice for the Collecting, Processing and Marketing of Natural Mineral Waters was adopted by the Codex Alimentarius Commission at its 16th Session in 1985.

This Code of Hygienic Practice is to be regarded as advisory in nature and individual governments should decide what use they wish to make of the Code. The Commission has expressed the view that codes of practice dealing with specific categories of foods might provide useful checklists of requirements for national enforcement authorities.

RECOMMENDED INTERNATIONAL CODE OF HYGIENIC PRACTICE FOR THE COLLECTING, PROCESSING AND MARKETING OF NATURAL MINERAL WATERS CAC/RCP 33-1985

SECTION I - FIELD OF APPLICATION

This Code recommends appropriate general techniques for collecting natural mineral water, its treatment, bottling, packaging, storage, transport, distribution and sale for direct consumption, so as to guarantee a safe, healthy and wholesome product.

SECTION II - DEFINITIONS

2.1 For the purpose of this code the following expressions have the meaning stated:

2.1.1 **Natural mineral waters** - all waters meeting the requirement of the European Standard for Natural Mineral Waters (CODEX STAN 108-1981).

2.1.2 **Adequate** - sufficient to accomplish the intended purpose of this code.

2.1.3 **Cleaning** - the removal of soil, food residues, dirt, grease or other objectionable matter.

2.1.4 **Contamination** - the occurrence of any objectionable matter in the product.

2.1.5 **Disinfection** - the reduction, without adversely affecting the natural mineral water, by means of hygienically satisfactory chemical agents and/or physical methods, of the number of microorganisms to a level that will not lead to harmful contamination of natural mineral water.

2.1.6 **Establishment** - any building(s) or areas in which natural mineral water is handled after collection and the surroundings under the control of the same management.

2.1.7 **Handling of natural mineral water** - any manipulation with regard to collecting, treating, bottling, packaging, storing, transport, distribution and sale of natural mineral water.

2.1.8 **Food Hygiene** - all measures necessary to ensure the safety, soundness and wholesomeness of natural mineral water at all stages from its exploitation and processing until its final consumption.

2.1.9 **Packaging Material** - any containers such as cans, bottles, cartons, boxes, cases or wrapping and covering material such as foil, film, metal paper and wax-paper.

2.1.10 **Pests** - any animals capable of directly or indirectly contaminating natural mineral water.

2.1.11 **Containers** - any bottle, carton, can or other container to be filled with natural mineral water, properly labelled and intended for sale.

2.1.12 **Aquifers** - any solid permeable mass of rocks (layer) containing natural mineral water.

2.1.13 **Spring** - any natural mineral water discharging genuinely from the ground.

SECTION III - PRESCRIPTIONS OF THE RESOURCES OF NATURAL MINERAL WATERS

A. Protection of alimentary reservoirs and aquifers

3.1 Authorization

Any spring, well or drilling intended for the collection of natural mineral water should be approved by the official authority having jurisdiction for this region.

3.2 Determination of the genesis of natural mineral water

As far as it is methodologically possible in each case, a precise analysis should be carried out on the origin of natural mineral waters, the period of their residence in the ground before being collected and their chemical and physical qualities.

3.3 Perimeter of protection

If possible areas wherein natural mineral water might be polluted or its chemical and physical qualities otherwise deteriorated should be determined by a hydrologist. Where indicated

by hydrogeological conditions and considering the risks of pollution and physical, chemical and biochemical reactions, several perimeters with separate dimensions may be provided for.

3.4 Protective Measures

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.

It is recommended that regulations be established for the disposal of liquid, solid or gaseous waste, the use of substances that might deteriorate natural mineral water (e.g. by agriculture) as well as for any possibility of accidental deterioration of natural mineral water by natural occurrences such as a change in the hydrogeological conditions. Particular consideration should be given to the following potential pollutants: bacteria, viruses, fertilizers, hydrocarbons, detergents, pesticides, phenolic compounds, toxic metals, radioactive substances and other soluble organic or inorganic substances. Even where nature provides apparently sufficient protection against surface pollution, potential hazards should be taken into consideration, such as mining, hydraulic and engineering facilities etc.

B. Hygiene prescriptions for the collection of natural mineral water

3.5 Extraction

The withdrawal of natural mineral water (from springs, galleries, genuine or drilled wells) must be performed in conformity with the hydrogeological conditions in such a manner as to prevent any other than the natural mineral water from entering or, should there be pumping facilities, prevent any extraneous water from entering by reducing the supply. The natural mineral water thus collected or pumped should be protected in such a way that it will be safe from pollution whether caused by natural occurrence or actions or neglect or ill will.

3.6 Materials

The pipes, pumps or other possible devices coming into contact with natural mineral water and used for its collection should be made of such material as to guarantee that the original qualities of natural mineral water will not be changed.

3.7 Protection of the extraction area

In the immediate surroundings of springs and wells, precautionary measures should be taken to guarantee that no pollutant whatsoever can enter the extraction area. The extraction area should be inaccessible to non-authorized people by providing adequate devices (e.g. enclosure). Any use not aiming at the collection of natural mineral water should be forbidden in this area.

3.8 The exploitation of natural mineral water

The condition of the extraction facilities, areas of extraction and perimeters of protection

as well as the quality of the natural mineral water should periodically be checked. To control the stability of the chemical and physical particulars of the natural mineral water derived - besides the natural variations - automatic measurements of the typical characteristics of water should be carried out and notified (e.g., electrical conductance, temperature, content of carbon dioxide) or frequent partial analyses should be done.

C. Maintenance of extraction facilities

3.9 Technical Aspects

Methods and procedures for maintaining the extraction facilities should be hygienic and not be a potential health hazard to humans or a source of contamination to natural mineral water. From the hygiene standpoint, servicing of the extraction installations should meet the same standards as those required for the bottling or treatment.

3.10 Equipment and reservoirs

Equipment and reservoirs used for extraction of natural mineral water should be constructed and maintained in order to minimize all hazards to human health and to avoid contamination.

3.11 Storage at the point of extraction

The quantity of natural mineral water stored at the point of extraction should be as low as possible. The storing should furthermore guarantee protection against contamination or deterioration.

D. Transport of natural mineral water

3.12 Means of transport, piping and reservoirs

Any vehicle, piping or reservoir used in the processing of natural mineral water from its source to the bottling facilities, the latter included, should comply with the necessary requirements and be made of inert material such as ceramic and stainless steel which prevents any deterioration, be it by water, handling, servicing or disinfection; it should allow easy cleaning.

3.13 Maintenance of vehicles and reservoirs

Any vehicle or reservoir should be properly cleaned and if necessary disinfected and kept in good repair so as to not to present any danger of contamination to natural mineral water and of deterioration of the essential qualities of natural mineral water.

SECTION IV - ESTABLISHMENT FOR PROCESSING NATURAL MINERAL WATERS - DESIGN

AND FACILITIES

4.1 Location

Establishments should be located in areas which are free from objectionable odours, smoke, dust or other contaminants and are not subject to flooding.

4.2 Roadways and areas used by wheeled traffic

Such roadways and areas serving the establishment which are within its boundaries or in its immediate vicinity should have a hard paved surface suitable for wheeled traffic. There should be adequate drainage and provision should be made for protection of the extraction area in accordance with sub-section 3.7 where appropriate and to allow for cleaning. Adequate road signals may be provided to call the attention of road users to the existence of a natural mineral water extraction area.

4.3 Buildings and Facilities

4.3.1 Type of construction

Buildings and facilities should be of sound construction in accordance with the provisions of sub-section 3.7 and maintained in good repair.

4.3.2 Disposition of holding facilities

Rooms for recreation, for storing or packaging of raw material and areas for the cleaning of containers to be re-used should be apart from the bottling areas to prevent the end-product from being contaminated. Raw and packaging materials and any other additions which come into contact with natural mineral water should be stored apart from other material.

4.3.3 Adequate working space should be provided to allow for satisfactory performance of all operations.

4.3.4 The design should be such as to permit easy and adequate cleaning and to facilitate proper supervision of natural mineral water hygiene.

4.3.5 The buildings and facilities should be designed to provide separation by partition, location or other effective means between those operations which may cause cross-contamination.

4.3.6 Buildings and facilities should be designed to facilitate hygienic operations by means of a regulated flow in the process from the arrival of the natural mineral water at the premises to the finished product, and should provide for appropriate temperature conditions for the process and the product.

4.3.7 Natural mineral water handling, storing and bottling areas

Floors, where appropriate, should be of water-proof, non-absorbent, washable, non-slip and non-toxic materials, without crevices, and should be easy to clean and disinfect. Where appropriate, floors should slope sufficiently for liquids to drain to trapped outlets.

Walls, where appropriate, should be of water-proof, non-absorbent, washable and non-toxic materials and should be light coloured. Up to a height appropriate for the operation they should be smooth and without crevices, and should be easy to clean and disinfect. Where appropriate, angles between walls, between walls and floors, and between walls and ceilings should be sealed and coved to facilitate cleaning.

Ceilings should be so designed, constructed and finished as to prevent the accumulation of dirt and minimize condensation, mould development and flaking, and should be easy to clean.

Windows and other openings should be so constructed as to avoid accumulation of dirt and those which open should be fitted with screens. Screens should be easily movable for cleaning and kept in good repair. Internal window sills, if present, should be sloped to prevent use as shelves.

Doors should have smooth, non-absorbent surfaces and, where appropriate, be self-closing and close fitting.

Stairs, lift cages and auxiliary structures such as platforms, ladders, chutes, should be so situated and constructed as not to cause contamination to food. Chutes should be constructed with inspection and cleaning hatches.

Piping for natural mineral water lines should be independent of potable and non-potable waters.

4.3.8 In natural mineral water handling areas all overhead structures and fittings should be installed in such a manner as to avoid contamination directly or indirectly of natural mineral water and raw materials by condensation and drip, and should not hamper cleaning operations. They should be insulated where appropriate and be so designed and finished as to prevent the accumulation of dirt and to minimize condensation, mould development and flaking. They should be easy to clean.

4.3.9 Living quarters, toilets and areas where animals are kept should be completely separated from and should not open directly on to natural mineral water handling areas.

4.3.10 Where appropriate, establishments should be so designed that access can be controlled.

4.3.11 The use of material which cannot be adequately cleaned and disinfected, such as wood, should be avoided unless its use would clearly not be a source of contamination.

4.3.12 Canalization, drainage lines

Canalization and drainage and used water lines as well as any possible waste storage area within the protected perimeter should be built and maintained in such a manner as not to present any risk whatsoever of polluting aquifers and springs.

4.3.13 Fuel storage area

Any storage area or tank for the storing of fuels such as coal or hydrocarbons should be designed, protected, controlled and maintained in such a manner as not to present a risk of aquifers and springs being polluted during the storage and manipulation of these fuels.

4.4 Hygienic Facilities

4.4.1 Water supply

4.4.1.1 An ample supply of potable water in compliance with Section 7.3 of the Codex Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 2 (1985)) under adequate pressure and of suitable temperature should be available with adequate facilities for its storage, where necessary, and distribution, and with adequate protection against contamination. The standards of potability should not be less than those contained in the latest edition of "International Standards of Drinking Water" (WHO).

4.4.1.2 Natural mineral water, potable water, non potable water for steam production or for refrigeration or any other use should be carried in completely separate lines with no cross connection between them and without back siphonage. It would be desirable that these lines be identified by different colours. Steam used in direct contact with natural mineral water and natural mineral water contact surfaces should contain no substances which may be hazardous to health or may contaminate the food.

4.4.2 Effluent and waste disposal

Establishments should have an efficient effluent and waste disposal system which should at all times be maintained in good order and repair. All effluent lines (including sewer systems) should be large enough to carry peak loads and should be so constructed as to avoid contamination of potable water supplies.

4.4.3 Changing facilities and toilets

Adequate, suitable and conveniently located changing facilities and toilets should be provided in all establishments. Toilets should be so designed as to ensure hygienic removal of waste matter. These areas should be well lit, ventilated and where appropriate heated, and should not open directly on to natural mineral water handling areas. Hand washing facilities with warm or hot and cold water, a suitable hand-cleaning preparation, and with suitable hygienic means of drying hands, should be provided adjacent to toilets and in such a position that the

employee must pass them when returning to the processing area. Where hot and cold water are available mixing taps should be provided. Where paper towels are used, a sufficient number of dispensers and receptacles should be provided near to each washing facility. Care should be taken that these receptacles for used paper towels are regularly emptied. Taps of a non-hand operable type are desirable. Notices should be posted directing personnel to wash their hands after using the toilet.

4.4.4 Hand washing facilities in natural mineral water processing areas

Adequate and conveniently located facilities for hand washing and drying should be provided wherever the process demands. Where appropriate, facilities for hand disinfection should also be provided. Warm or hot and cold water and a suitable hand-cleaning preparation should be provided. Where hot and cold water are available mixing taps should be provided. There should be suitable hygienic means of drying hands. Where paper towels are used, a sufficient number of dispensers and receptacles should be provided adjacent to each washing facility. Taps of a non-hand operable type are desirable. The facilities should be furnished with properly trapped waste pipes leading to drains.

4.4.5 Disinfection Facilities

Where appropriate, adequate facilities for cleaning and disinfection of working implements and equipment should be provided. These facilities should be constructed of corrosion resistant materials, capable of being easily cleaned, and should be fitted with suitable means of supplying hot and cold water in sufficient quantities.

4.4.6 Lighting

Adequate natural or artificial lighting should be provided throughout the establishment. Where appropriate, the lighting should not alter colours and the intensity should not be less than:

540 lux (50 foot candles) at all inspection points

220 lux (20 foot candles) in work rooms

110 lux (10 foot candles) in other areas.

Light bulbs and fixtures suspended over natural mineral water in any stage of production should be of a safety type and protected to prevent contamination of natural mineral water in case of breakage.

4.4.7 Ventilation

Adequate ventilation should be provided to prevent excessive heat, steam condensation and dust and to remove contaminated air. The direction of the air flow should never be from a dirty area to a clean area. Ventilation openings should be provided with a screen or other protecting enclosure of non-corrodible material. Screens should be easily removable for cleaning.