

Appendix –II

Bhutan Mineral Water Policy and International Water Standards

A. Bhutan Mineral water Policy -2007 :

The “Bhutan Water Policy” dated 2007 published by NEC as a precursor to water act, which is expected to be ready by end of 2008.

Its says:

“Comprehensive water legislation and regulations along with elaborate with water abstraction procedures shall be developed. Licencing of activities that abstract water for commercial use shall be made mandatory. The licence shall specify the quantity, time frame, and quality of abstractions and discharge of effluents. The legislation shall also lay down provisions for a systematic registration of all forms of water uses, for the purposes of national integrated management plan and other uses.”

B. Mineral Water Standards:

1. Indian Standard:

Packaged Natural Mineral Water- Specification **IS 13428:2005** (Second Revision)

This standard prescribes the requirements, methods of sampling and test for natural mineral waters offered for sale in packaged form for human consumption. The main features of these standards are as follows:

- Natural mineral water shall be collected; processed, handled, packaged and marketed in accordance with the hygienic practices. The hygienic practices cover 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.
- Mineral water treatments permitted include separation from unstable constituents, such as compounds containing iron, manganese, sulphur or arsenic, by decantation and/or simple filtration up to 0.5 microns, if necessary, accelerated by previous aeration.
- Plant establishments should be located in areas which are free from objectionable odours; smoke, dust or other contaminants and are not subject to flooding.
- Natural mineral water shall be packed in clean, hygienic, colourless, transparent and tamperproof bottles/containers, made of polyethylene (PE) or polyvinyl chloride (PVC) or polypropylene or polyalkylene terephthalate (PET and PBT) or polycarbonate or polystyrene or sterile glass bottles suitable for preventing possible adulteration or contamination of the water.

- All packaging materials of plastic origin shall pass the overall migration and colour migration limits as laid down in the relevant Indian Standards for products for respective packaging materials when tested as per method given in IS 9845.
- The use of the IS Standard Mark is governed by the provisions of Bureau of Indian Standards Act, 1986 and the Rules and Regulations framed thereunder. The details of the conditions under which the licence for use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.
- Waste material should be handled in such a manner as to avoid contamination of natural mineral water or potable water. Care should be taken to prevent access to waste by pests. Waste should be removed from the natural mineral water handling and other working areas as often as necessary and at least daily immediately after disposal of the waste, receptacles used for storage and any equipment which has come into contact with the waste should be cleaned and disinfected. The waste storage area should also be cleaned and disinfected.

2. General Standard for Bottled/Packaged Drinking Waters (Other than Natural Mineral Waters) ***CODEX STAN 227-2001***

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/bottled¹ and are suitable for human consumption.

“**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.

The main features of these standards are as follows:

- 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 used to achieve them do not change the essential physicochemical characteristics nor compromise the chemical, radiological and microbiological safety of these waters when packaged.
- 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.
- 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).
- 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).
- Where required by the authorities having jurisdiction, if 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.
- The name of the locality, hamlet or specified place may not form part of the trade name unless it refers to water defined by origin collected at the place designated by that trade name.
- 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.

3. Code of Hygienic Practice for Bottled/Packaged Drinking Waters

(Other than Natural Mineral Waters) *CAC/RCP 48-2001*

This Code recommends general techniques for collecting, processing, packaging, storing, transporting, distributing, and offering for sale a variety of drinking waters (other than natural mineral water) for direct consumption. All bottled/packageged drinking waters other than natural mineral water are covered by this Code. The main features of these standards are as follows:

- Hydrogeological data should determine the watershed and the perimeter (area surrounding the body of water from which supplies are drawn or the water's point of origin in the ground) that can be sources of contamination. These critical areas should be protected as much as possible.
- All possible precautions should be taken within the protected perimeter (zone of protection) to avoid any pollution of, or external influence on, the quality of the ground or surface water.
- Disposal of pollutants such as microorganisms, fertilizers, hydrocarbons, detergents, pesticides, phenolic compounds, toxic metals, radioactive substances and other soluble organic and inorganic substances in the watershed should be avoided. Nor should drinking water resources be in the path of potential sources of underground contamination, such as sewers, septic tanks, industrial waste ponds, gas or chemical tanks, pipelines and solid waste disposal sites.
- Bottling operations (i.e. filling and sealing of containers) should be conducted in a manner that protects against contamination. Control measures include the use of an enclosed area and a containment enclosed system separate from other operations of the processing plant to protect against contamination. Dust, dirt, microorganisms in the air, and condensation should be controlled and monitored.
- When storage and transport of the water intended for bottling from the point of origin to the processing plant is necessary, these operations must be conducted in a hygienic manner to prevent any contamination.

4. Codex Standard for Natural Mineral Waters (Codex Stan 108 - 1981, Rev. 1 – 1997 1)

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. The main features of these standards are as follows:

- 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.
- The transport of natural mineral waters in bulk containers for packaging or for any other process before packaging is prohibited.
- 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).
- Natural mineral water shall be packed in hermetically sealed retail containers suitable for preventing the possible adulteration or contamination of water.
- 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.

*Detail specifications are as follows in same sequence given following pages:

Indian Standard
Packaged Natural Mineral Water- Specification
IS 13428:2005 (Second Revision)

General Standard for Bottled/Packaged Drinking Waters
(Other than Natural Mineral Waters)
CODEX STAN 227-2001

**Code of Hygienic Practice for
Bottled/Packaged Drinking Waters**
(Other than Natural Mineral Waters)
CAC/RCP 48-2001

Codex Standard for Natural Mineral Waters (Codex Stan 108 - 1981, Rev. 1 – 1997 1)