GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 98/TG.III/631/11

New Delhi,
Dt. March 22, 2001

The General Manager
All Indian Railways.

Commercial Circular no. 20 of 2001

Sub: - Procurement and Supply of "Packaged Drinking Water" on Indian Railways.

Zonal Railways were advised to procure and supply "Mineral water" on railways as per the specifications of IS 13428:1992 vide Railway Board letter No. 98/TG.III/603/11 dated 18.02.1999. The Bureau of Indian Standards (BIS) has specified separate specifications for "Packaged Drinking Water" i.e. IS 14543: 1998 and "Natural Mineral Water" i.e. IS 13428: 1998 and the specifications contained in IS 13428:1992 are no longer in existence. The manufacturers of "Packaged Drinking Water" will now require certification of BIS as per the revised instructions contained in the Gazette Notification No. 510 dated 29.9.2000 of Ministry of Health & Family Welfare, Government of India (copy enclosed). The revised Rules shall be called the Prevention of Food Adulteration (76th Amendment) Rules, 2000 and shall come into force on 29.3.2001.

The matter has been examined in consultation with Health and Finance Directorates of Railway Board and it has been decided that railways will procure and supply "Packaged Drinking Water" at stations and in trains. These guidelines will supercede the earlier instructions circulated on this subject. With immediate effect following guidelines should be observed for procurement and supply of "Packaged Drinking Water" on Indian Railways.

1. Terminology -

The "Packaged Drinking Water" means water derived from any source of potable water which is subjected to treatments, namely, decantation, filtration, combination of filtration, aeration, filtration with membrane filter, depth filter, cartridge filter, activated carbon filtration, demineralization, remineralisation, reverse osmosis and packed. It may be disinfected to a level that will not lead to

T4-I

harmful contamination in the drinking water. It may be disinfected by means of chemical agents and/or physical method of the number of micro-organism to a level that does not compromise food safety or suitability.

2. Packaging -

The "Packaged Drinking Water" shall be packed in clean, sterile colourless, transparent and tamperproof bottles/containers made of polyethylene (PE) conforming to IS :10146 or polyvinyl chloride (PVC) conforming to IS:10151 or polyalkylene terephthalate (PET and PBT) conforming to IS:12252 or polypropylene conforming to IS:10910 or foodgrade polycarbonate or sterile glass bottles suitable for preventing possible adulteration or contamination of the water. Seal should be tamper proof.

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.

3. Marking -

The following particulars shall be marked legibly and indelibly on the label of the bottle / container:

"Packaged Drinking Water"
Packed for Indian Railways as per IS 14543 : 1998
MRP: - Rs. ----

- Brand Name,
- Name of Manufacturer with address and telephone number
- Batch or code number,
- Date of processing/ packing,
- Best for consumption up to---(date /month in capital letters),
- Net volume,
- RAILAHAR logo
- Direction for storage and
- Message "CRUSH AFTER USE"

4. Specifications :

The "Packaged Drinking Water" shall confirm to the following fifty one (51) specifications:

S.No	Characteristics	Requirements
1.	Colour	Not more than 2 Hazen Units/True Colour Units
2.	Odour	Agreeable
3.	Taste	Agreeable
4.	Turbidity	Not more than 2 nephelometric turbidity unit (NTU)
5.	Total Dissolved Solids	Not more than 500 mg/litre
6.	PH	6.5 – 8.5
7.	Nitrates (as NO3)	Not more than 45 mg/litre
8.	Nitrites (as NO2)	Not more than 0.02 mg/litre
9.	Sulphide (as H2S)	Not more than 0.05 mg/litre
10.	Mineral Oil	Not more than 0.01 mg/litre
11.	Phenolic compounds (as C6H5OH)	Not more than 0.001 mg/litre
12.	Manganese (as Mn)	Not more than 0.1 mg/litre
13.	Copper (as Cu)	Not more than 0.05 mg/litre
14.	Zinc (as Zn)	Not more than 5 mg/litre
15.	Fluoride (as F)	Not more than 1.0 mg/litre
16.	Barium (as Ba)	Not more than 1.0 mg/litre
17.	Antimony (as Sb)	Not more than 0.005 mg/litre
18.	Nickle (as Ni)	Not more than 0.02 mg/litre
19.	Borate (as B)	Not more than 5 mg/litre
20.	Anionic surface active agents (as MBAS)	Not more than 0.2 mg/litre
21.	Silver (as Ag)	Not more than 0.01 mg/litre
22.	Chlorides (as Cl)	Not more than 200 mg/litre
23.	Sulphate (as SO4)	Not more than 200 mg/litre
24.	Magnesium (as Mg)	Not more than 30 mg/litre
25.	Calcium (as Ca)	Not more than 75 mg/litre
26.	Sodium (as Na)	Not more than 200 mg/litre
27.	Alkalinity (as HCO3)	Not more than 200 mg/litre
28.	Arsenic (as As)	Not more than 0.05 mg/litre
29.	Cadmium (as Cd)	Not more than 0.01 mg/litre
30.	Cyanide (as CN)	Not more than 0.05 mg/litre
31.	Chromium (as Cr)	Not more than 0.05 mg/litre
32.	Mercury (as Hg)	Not more than 0.001 mg/litre

33.	Lead (as Pb)	Not more than 0.01 mg/litre
34.	Selenium (as Se)	Not more than 0.01 mg/litre
35.	Iron (as Fe)	Not more than 0.1 mg/litre
36.	Poly nuclear aromatic hydrocarbons	Not detectable
37.	Polychlorinated biphenyle (PCB)	Not detectable
38.	Aluminium (as Al)	Not more than 0.03 mg/litre
39.	Residual free chlorine	Not more than 0.2 mg/litre
40.	Pesticide Residues	Below detectable limits
41.	"Alpha" activity	Not more than 0.1 Baquerel/litre(Bq)
42.	"Beta" activity	Not more than 1 pico curie/litre (pCi)
43.	Yeast and mould counts 1 x 250 ml	Absent
44.	Salmonella and Shigella 1 x 250 ml	Absent
45.	E.Coli or thermotolerant bacteria 1 x 250 ml	Absent
46.	Coliforma bacteria 1 x 250 ml	Absent
47.	Faecal streptococci and staphylococus aureus 1 x 250 ml	Absent
48.	Pseudomonas aeruginosa 1 x 250 ml	Absent
49.	Sulphite-reducing anaerobes 1 x 50 ml	Absent
50.	Vibrio cholera and V. parahaemolyticus 1 x 250 ml	Absent
51.	Aerobic Microbial Count 1 x 250 ml	The total viable colony count shall not exceed 100 per ml at 20° C to 22° C in 72 h on agar – agar or agar– gelatin mixture, and 20 per ml at 37 degree C in 24 h on agar-agar.

5. Labelling Prohibitions-

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

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

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 such waters put on sale is prohibited.

6. Procedure for Procurement-

6.1 In order to get competitive rates it has been decided that zonal railways will centrally process and call for open tender for the procurement of "Packaged Drinking Water". Zonal railways will invite bids through press notification under two - packet system from reputed and approved manufacturer/suppliers only.

6.2 **Level of tender committee-** The level of tender committee of three officers one each from Commercial, Finance and Medical departments will be decided by the zonal railways as per the Schedule of Powers prevailing on the respective railways. The accepting authority will be one level higher than that of Tender Committee.

6.3 Zonal railways will carefully assess the requirement of "Packaged Drinking Water" for departmentally managed units on the entire railway, which should be indicated in the notification. However, it should be indicated in the notification that the quantity mentioned in the notification is an approximation and railway shall be free to make procurement of Packaged Drinking Water as per the actual requirement.

6.4 Railways may decide to procure "Packaged Drinking Water" in various container sizes such as 5 –litre, 2-litre, 1-litre, 500 ml, 300 ml., pouches etc.

6.5 Bid for packet – "A" and Packet – "B" should be submitted in two separately sealed envelops.

6.6 The parties who wish to apply for the tender should fulfil the following eligibility criteria, information on which should be furnished in Packet 'A'

a) Reputation/Popularity of the product in the market;
b) Sales turn over of the company;
c) Financial standing and Track record of the company;
d) Capability to make direct supply of "Packaged Drinking Water" in different packaging, as specified by zonal railways;
e) Proximity of the plants/ suppliers to the zonal railways;
f) Establishment for processing of "Packaged Drinking Water"- should conform to the specifications contained in annex B (Clause 5) of Indian Standard for "Packaged Drinking Water" IS 14543:1998 (copy enclosed).

g) The tenderer will be required to submit a copy of certificate from BIS in regard to conformation as per IS 14543:1998, subject to verification of original certificate.

h) Conformity to BIS specifications in regard to product and packaging materials as given above. Latest report from Government recognized laboratory not older than six months should also be furnished, subject to verification of the original report.

6.7 Besides, following documents should also be furnished in packet 'A': -

a) Demand Draft/Banker's Cheque of the amount equivalent to 5% (five) of the estimated tender value subject to a maximum of Rs.1,00,000/- towards Earnest Money;

b) Latest Income Tax Clearance Certificate;

c) Sales Tax Certificate;

d) Audited copy of the annual sales turnover and company's registration certificate and

e) Any other document considered relevant by the zonal railway.

6.8 Tender committee should satisfy about the genuineness of the parties in regard to their manufacturing/distribution capacity and insist on the original certificate of Bureau if Indian Standard in this regard.

6.9 Packet-B, which is the financial offer, will be opened only after short-listing of eligible applicants on the basis of Packet "A" and will contain the financial bid only and no other document.

6.10 Financial bids shall contain the net rate for per unit quantity of various container sizes as specified in tender notice, which shall be inclusive all taxes/charges viz. excise duty, sales tax, freight, octroi duty if any or any other tax leviable by the State/Central Governments.

6.11 Normally lowest technically acceptable offer (L-1) from the shortlisted parties should be accepted. However, if the committee feels that it may not be possible for the (L-1) to ensure smooth supply of required quantity of "Packaged Drinking Water", on entire railway, the tender committee may decide to give a counter offer to all the short listed parties. Zonal railway may enter into price agreement with the parties who accept the lowest accepted rates. Accordingly, it may also be mentioned in the tender notification that Railway shall be free to place supply order on more than one firm.

6.12 A list of parties, who enter into price agreement with zonal railways, should be circulated to the divisions. Divisions will place supply order as per the price agreement, on these firms for the supply of "Packaged Drinking Water" for departmentally managed units and the Divisions should not go into tender process separately.

6.13 The parties signing price agreement should be asked to deposit a sum of Rs. 2 lakh (Two lakh) by means of Bank Draft/Banker's Cheque as Security Deposit. The Earnest Money of the successful parties will be adjusted towards the Security Deposit.

6.14 Short-listing of the manufacturers/suppliers done at the level of zonal railways will be valid for a period of **one year.** Zonal railways should process for fresh tender well in advance for next year to avoid any extension of the existing agreement.

7. Procurement of Packaged Drinking Water by Private Licensees.

Catering licensee shall be free to procure "Packaged Drinking Water" from any manufacturer / supplier shortlisted by respective zonal railways (on the basis of the technical conditions contained in Packet 'A') at their own terms and conditions. However, in case of long distance trains licensees should be allowed to supply any brand shortlisted by any of the zonal railways to avoid carriage of additional quantity of bottled water and to avoid any shortage enroute. Licencees shall, however, carry the list of suppliers/manufacturers shortlisted by the various Zonal Railways for inspection.

8. Provision of "Packaged Drinking Water" in Trains and at Stations-

a) Chilled "Packaged Drinking Water" should be provided to all passengers travelling on Rajdhani and Shatabdi Express train as per extant instructions.

b) Chilled "Packaged Drinking Water" bottles/pouches should be made available for sale at all important stations/railway premises.

c) Chilled "Packaged Drinking Water" in bottles and in pouches should be made available for sale on all trains.

d) Chilled "Packaged Drinking Water" in pouches of 300ml. should be supplied free of cost along with meals on trains (other than Rajdhani/Shatabdi Express trains).

9. Prevention of Re- use/ Recycling-

All out efforts should be made to ensure that empty bottles/pouches are not recycled. Railways should take following action;

a) Vigorous campaign should be launched through media/public address system.

b) Travelling public should be counseled regularly regarding recycling of mineral water bottles through time tables, printed on the back of PRS ticket, announcement in Rajdhani/Shatabdi Express trains etc.

c) As already specified CRUSH AFTER USE should be marked on every container.

d) Catering staff should also counsel the passengers and motivate them to take every bottles with them if not consumed fully or crush after use. The display of educational slogans and posters on the need for destroying disposable bottles should also be considered.

10. Inspection and Quality Control-

In the public interest railways should strengthen their inspecting machinery to ensure the quality of the bottled water by observing the following:

a) As cent percent inspection is not practically possible at the time of supply, the supplier shall replace at his own cost water bottles/pouches, which are subsequently found to be not upto the approved specifications. In the event of the supplier not doing so, the cost thereof will be recovered from his bills/security deposit.

b) Railway may impose fine in case of any irregularity.

c) Medical officers will exercise checks under quality control and Prevention of Food Adulteration Act (PFA). Wherever a sample collected under quality control is found to be adulterated/substandard, the Medical Officers will report the matter to the controlling authority. In case of samples found adulterated under PFA, when the offence is minor in nature i.e. adulteration is not injurious to health and, where the case is not fit for prosecution in court of law due to technical/procedure deficiencies, the controlling authority may take departmental action. Whenever prosecution is launched in the court of law, the cases should be rigorously pursued to their logical ends.

d) Wide publicity may be given for the users to check bottle for any visible impurities and the labels for date of expiry.

e) The sample will also be taken by the qualified Food Inspectors for checking under PFA, if found unfit a prosecution to be launched in the Court of Law. For repeated failures or serious irregularities, the suppliers may be blacklisted under advice to Railway Board and all zonal railways

f) To ensure that packaged water bottles procured by the Administration, in case of departmentally managed catering/vending units, railways may use appropriate labels to discourage parallel sales and analysis of demand and supply should be regularly conducted by the zonal railways. Strict action should be taken against the vendors found indulging in parallel sales.

11. Termination Clause-

Contract agreement should have adequate safeguard against sub-standard / adulterated /irregular /non-supply of contract item. Along with others, agreement should inter-alia have the provision that Railway Administration shall exercise right for terminating the contract/forfeiting the security amount without notice in case suppliers are found supplying sub-standard/adulterated/irregular supply.

In case of any breach of supply, railways will be free to obtain supply from any other companies and difference of rates if any will be borne by the companies. Their Security Deposit will also be forfeited and contract will stand cancelled with immediate effect.

This issues with concurrence of Finance and Health Directorate of Railway Board.

(Yogendra Sharma)
Director (Catering)
22/3/01

Encl: as above

No. 98/TG.III/631/11 New Delhi, Dated. March 22, 2001

Copy to: -

1. FA & CAO, All Indian Railways, (with five spare copies) for information.
2. ADAI/Railways (with 36 spare copies).

for Financial Commissioner/Railways

(Hindi version will follow)

Copy to:- 1. DG/RHS, Railway Board & Dir.Fin.(Comml.)
2. Fin.(Comml.), TG.I & Health Branches of Rly.Bd.

The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड—3—उप खण्ड (i)

PART II—Section—3—Sub-section (i)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं० 510] नई दिल्ली, शुक्रवार, सितम्बर 29, 2000/आश्विन 7, 1922

No. 510] NEW DELHI, FRIDAY, SEPTEMBER 29, 2000/ASVINA 7, 1922

(स्वास्थ्य और परिवार कल्याण मंत्रालय)

(स्वास्थ्य विभाग)

अधिसूचना

नई दिल्ली, 29 सितम्बर, 2000

सा.का.नि. 760 (अ).— खाद्य अपमिश्रण निवारण नियम, 1955 का और संशोधन करने के लिए कतिपय प्रारूप नियम, खाद्य अपमिश्रण निवारण अधिनियम, 1954 (1954का 37) की धारा 23 की उपधारा (1) की अपेक्षानुसार, भारत सरकार के स्वास्थ्य और परिवार कल्याण मंत्रालय, (स्वास्थ्य विभाग) की अधिसूचना संख्यांक सा॰का॰नि॰ 85(अ), तारीख 3 फरवरी, 2000 द्वारा, भारत के राजपत्र, असाधारण, भाग 2, खंड 3, उपखंड (i), तारीख 3 फरवरी, 2000 में, ऐसे व्यक्तियों से, जिनके उससे प्रभावित होने की संभावना थी, उस तारीख से, जिसको भारत के ऐसे राजपत्र की प्रतियां, जिसमें उक्त अधिसूचना प्रकाशित की गई थी, जनता को उपलब्ध करा दी गई थीं, साठ दिन की अवधि की समाप्ति से पूर्व, आक्षेप और सुझाव आमंत्रित करते हुए, प्रकाशित किए गए थे;

और भारत के उक्त राजपत्र की प्रतियां तारीख 4 फरवरी, 2000 को जनता को उपलब्ध करा दी गई थीं;

और उक्त प्रारूप नियमों पर जनता से प्राप्त आक्षेपों और सुझावों पर केन्द्रीय सरकार द्वारा विचार किया गया है;

अतः, अब, केन्द्रीय सरकार, खाद्य अपमिश्रण निवारण अधिनियम, 1954 (1954 का 37) की धारा 23 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, केन्द्रीय खाद्य मानक समिति से परामर्श के पश्चात्, खाद्य अपमिश्रण निवारण नियम, 1955 का और संशोधन करने के लिए निम्नलिखित नियम बनाती है, अर्थात् :-

नियम

1. (1) इन नियमों का संक्षिप्त नाम खाद्य अपमिश्रण निवारण (सातवां संशोधन) नियम, 2000 है।

(2) ये 29-3-2001 को प्रवृत्त होंगे।

2. खाद्य अपमिश्रण निवारण नियम, 1955 में, --

(i) नियम 42 के उपनियम (ख) में, खण्ड (13) के पश्चात् निम्नलिखित खंड अन्तः स्थापित किया जाएगा, अर्थात् :-

"(14) पेय जल के प्रत्येक पैकेज पर स्पष्ट अक्षरों में निम्नलिखित घोषणा लगी होगी जिसमें प्रत्येक अक्षर का वही आकार होगा जो नियम 36 में विहित है :

पैकेजबंद, पेय जल

(ii) नियम 49 में, उपनियम (27) के पश्चात निम्नलिखित उपनियम अंतः स्थापित किया जाएगा, अर्थात् :-

"(28) कोई भी व्यक्ति, भारतीय मानक ब्यूरो प्रमाणन चिन्ह के अधीन के सिवाय पैकेज बंद पेय जल का विनिर्माण, विक्रय या विक्रय के लिए प्रदर्शन नहीं करेगा;

§iii§ परिशिष्ट "ख" में मद क 32 के पश्चात् निम्नलिखित मद अंतः स्थापित की जाएगी, अर्थात् :-

क 33 पैकेज बंद पेय जल §खनिज जल से भिन्न§ :

"पैकेजबंद जल" से ऐसा जल अभिप्रेत है जो पेयजल के किसी स्त्रोत से प्राप्त किया गया है, जिसके निस्तारण, निष्कंदन, निष्कंदन का संयोजन वातन, डिल्लीदार निष्कंदक के साथ निष्कंद, गहन निष्कंदक, कार्ट्रिज निष्कंदक, सक्रीयित कार्बन निष्कंदन, विखनिजीकरण, पुनः खनिजीकरण, प्रतीप परासरण जैसी कोई उपचार किए गए है और पैक किया गया है। यह उस स्तर तक विसंक्रमणित किया जा सकेगा जिससे पेयजल में हानिकर संदूषण हो। यह रायायनिक अभिक्रमकों और/या अनेक सूक्ष्म जीवाणुओं की भौतिक पद्धति के द्वारा उस स्तर तक विसंक्रमणित किया जा सकेगा जिससे खाद्य सुरक्षा या उपयुक्तता बनी रहे।

यह भा० मा० : 10146 के अनुरूप पालिएथिलीन §पी.ई.§ या भा०मा० 10151 के अनुरूप पालीविनायल क्लोराइड §पी.वी.सी.§ या भा०मा० 12252 के अनुरूप पालीएल्काईलीन टैरीफ्थालेट §पी.ई.टी. और पी.वी.टी.§ या भा०मा० 10910 के अनुरूप पालीप्रोपाएलीन या खाद्य ग्रेड पोलीकार्बोनेट से बनाई गई स्वच्छ, जीवाणुरहित, रंगहीन पारदर्शी और गड़बड़ न की जा सकने वाली बोतलों/आधानों में या जीवाणु रहित ऐसी कांच की बोतलों में, जो जल के संभावित अपमिश्रण या संदूषण का निवारण करने के लिए उपयुक्त हों, पैक किया जाएगा।

प्लास्टिक मूल की सभी पैकेजिंग सामग्रियां, अपने लिए उत्पादों के सुसंगत भारतीय मानकों में यथाविहित संपूर्ण प्रवास और रंजक प्रवास सीमा को पास करेगा। यह निम्नलिखित मानकों के अनुरूप होगा, अर्थात् :-

क्र. सं.	लक्षण	अपेक्षाएं
§1§	§2§	§3§
§1§	रंग	2 ब्रिज इकाई से अधिक नहीं ट्रू कलर इकाई
§2§	गंध	रूचिकार
§3§	स्वाद	रूचिकार

1	2	3
(4)	आविलता	2 आविलता मिताई इकाई (एनटीयू) से अधिक नहीं
(5)	सम्पूर्ण विलीन ठोस	500 मिलीग्राम/लीटर से अधिक नहीं
(6)	पी एच	6.5 – 8.5
(7)	नाइट्रेट्स (एन ओ$_3$ के रूप में)	45 मिलीग्राम/लीटर से अधिक नहीं
(8)	नाइट्राइट्स (एन ओ$_2$ के रूप में)	0.02 मिलीग्राम/लीटर से अधिक नहीं
(9)	सल्फाईड (एच$_2$एस के रूप में)	0.05 मिलीग्राम/लीटर से अधिक नहीं
(10)	खनिज तेल	0.01 मि.ग्रा./लीटर से अधिक नहीं
(11)	फेनोलिक यौगिक (सी$_6$एच$_5$ओ एच के रूप में)	0.001 मिलीग्राम/लीटर से अधिक नहीं
(12)	मैंगनीज (एम एन के रूप में)	0.1 मिलीग्राम/लीटर से अधिक नहीं
(13)	ताँबा (सी यू के रूप में)	0.05 मिलीग्राम/लीटर से अधिक नहीं ।
(14)	जिंक (जेड एन के रूप में)	5 मिलीग्राम/लीटर से अधिक नहीं
(15)	फ्लूओराइड (एफ के रूप में)	1.0 मिलीग्राम/लीटर से अधिक नहीं ।
(16)	बेरियम (बी ए के रूप में)	1.0 मिलीग्राम/लीटर से अधिक नहीं
(17)	ऐंटीमोनी (एस बी के रूप में)	0.005 मिलीग्राम/लीटर से अधिक नहीं
(18)	निकल (एन आई के रूप में)	0.02 मिलीग्राम/लीटर से अधिक नहीं
(19)	बोरेट (बी के रूप में)	5 मिलीग्राम/लीटर से अधिक नहीं
(20)	पृष्ठ सक्रिय कारक (एम बी ए एस के रूप में)	0.2 मि.ग्रा./लीटर से अधिक नहीं
(21)	सिल्वर (ए जी के रूप में)	0.01 मि.ग्रा./लीटर से अधिक नहीं
(22)	क्लोराइड (सी एल के रूप में)	200 मि.ग्रा./लीटर से अधिक नहीं
(23)	सल्फेट (एस ओ$_4$ के रूप में)	200 मि.ग्रा./लीटर से अधिक नहीं
(24)	मैगनीशियम (एम जी के रूप में)	30 मि.ग्रा./लीटर से अधिक नहीं
(25)	कैल्शियम (सी ए के रूप में)	75 मि.ग्रा./लीटर से अधिक नहीं
(26)	सोडियम (एन ए के रूप में)	200 मि.ग्रा./लीटर से अधिक नहीं
(27)	क्षारता (एच सी ओ$_3$ के रूप में)	200 मि.ग्रा./लीटर से अधिक नहीं
(28)	आर्सेनिक (ए एस के रूप में)	0.05 मि.ग्रा./लीटर से अधिक नहीं
(29)	कैडमियम (सी डी के रूप में)	0.01 मि.ग्रा./लीटर से अधिक नहीं

1	2	3
(30)	साइनाइड (सी एन के रूप में)	0.05 मि.ग्रा./लीटर से अधिक नहीं
(31)	क्रोमियम (सी आर के रूप में)	0.05 मि.ग्रा./लीटर से अधिक नहीं
(32)	मरक्यूरी (एच जी के रूप में)	0.001 मि.ग्रा./लीटर से अधिक नहीं
(33)	सीसा (पी बी के रूप में)	0.01 मि.ग्राम/लीटर से अधिक नहीं
(34)	सेलेनियम (एस.ई के रूप में)	0.01 मि.ग्रा./लीटर से अधिक नहीं
(35)	लौहा (एफ ई के रूप में)	0.1 मि.ग्रा./लीटर से अधिक नहीं
(36)	पालीन्यूक्लीयर एरोमेटिक हाइड्रोकार्बन्स	अनभिज्ञेय
(37)	पॉलिक्लोरिनेटिड बाईफिनाइल (पी सी बी)	अनभिज्ञेय
(38)	एल्युमीनियम (ए एल के रूप में)	0.03 मि.ग्रा./लीटर से अधिक नहीं।
(39)	अवशिष्ट मुक्त क्लोरीन	0.2 मिली ग्राम / लिटर से अधिक नहीं
(40)	पेस्टीसाइड अवशिष्ट	अभिज्ञेय सीमाओं से कम
(41)	अल्फा सक्रियता	0.1 बेक्यूरल/लीटर (बी क्यू) से अधिक नहीं
(42)	"बीटा" सक्रियता	1 पीको क्यूरी/ लीटर (पी सीआई) से अधिक नहीं
(43)	बीस्ट और फफूंदी गणना 1 x 250 मि.ली.	अविद्यमान
(44)	साल्मोनेलिया और शिगेला 1 x 250 मि.ली.	अविद्यमान
(45)	ई. कोली या ताप सहनशील बैक्टीरिया, 1 x 250 लीटर.	मिली/अविद्यमान
(46)	कोलीफार्म्स बैक्टीरिया 1 x 250 मिली लीटर	अविद्यमान

1.	2.	3.
(47)	मल स्ट्रेप्टोकोकी और स्टाफाइलोकोकस आरियस 1 × 25 मिली॰	अविद्यमान
(48)	सूडोमोनस एरुगिनोसा 1 × 25 मिली लीटर	अविद्यमान
(49)	सल्फाइट अवायवीय अपचायक 1 × 5 मिली लीटर	अविद्यमान
(50)	वाइब्रियो कोलरा और वी॰ पाराहेमोलाइटिकस 1 × 25 मिली लीटर	अविद्यमान
(51)	एरोबिक माइक्रोबियल गणक	कुल जीवनक्षम कालोनी गणना ऐगार-ऐगार पर या ऐगार-गिलेटिन मिश्रण पर 72 घंटे में 20° से॰ से 22° से॰ पर प्रति मिलीलीटर 100 से और ऐगार-ऐगार पर 24 घंटे में 37° से॰ पर प्रति मिलीलीटर 20 से अधिक नहीं होगी ।

लेबल लगाने का प्रतिषेध

मानक के अंतर्गत आने वाले उत्पाद के गुण धर्म की बाबत औषधीय (निरोधक, उपशमक या आरोग्यकारी) प्रभाव का दावा नहीं किया जाएगा । उपभोक्ताओं के स्वास्थ्य से संबंधित अन्य हितप्रद प्रभाव के दावे नहीं किए जाएंगे ।

जब तक कि व्यापार नाम में विनिर्दिष्ट स्थान का, जहां से पैकेजबंद जल का संग्रहण किया गया है, नाम न हो, परिक्षेत्र, पुरवा या विनिर्दिष्ट स्थान को व्यापार नाम के रूप में नहीं लिया जा सकेगा ।

जनता के मन में भ्रम उत्पन्न करने वाले किसी कथन या किसी सचित्र आकृति के उपयोग का या अन्य किसी प्रकार से विक्रय के लिए रखे गए ऐसे जल

की प्रकृति, उद्भव, सम्मिश्रण और गुण धर्म के बारे में जनता में भ्रम उत्पन्न करने का प्रतिषेध किया जाता है ।

[फा. सं. पी-15014/6/97-पीएच (खाद्य)]

दीपक गुप्ता, संयुक्त सचिव

पाद टिप्पण:—खाद्य अपमिश्रण निवारण नियम, 1955, भारत के राजपत्र, भाग II, खंड 3 में का.नि.आ. 2105 तारीख 12-9-1955 द्वारा प्रकाशित किए गए थे और इनमें अंतिम संशोधन सा.का.नि. 716 (अ) तारीख 13-9-2000 द्वारा किया गया था।

MINISTRY OF HEALTH AND FAMILY WELFARE

(Department of Health)

NOTIFICATION

New Delhi the 29th September, 2000

G.S.R. 760 (E).—Whereas certain draft rules further to amend the Prevention of Food Adulteration Rules, 1955 were published as required by sub-section (1) of section 23 of the Prevention of Food Adulteration Act, 1954 (37 of 1954) with the notification of Government of India in the Ministry of Health and Family Welfare (Department of Health) number G.S.R. 85 (E) dated the 3rd February, 2000 in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i); dated the 3rd February, 2000 inviting objections and suggestions from the persons likely to be affected thereby before the expiry of sixty days form the date on which copies of the Gazette of India in which the said notification was published, were made available to the public;

And whereas the copies of the said Gazette of India were made available to the public on 4th February, 2000;

And whereas the objections and suggestions received from the public on the said draft rules have been considered by the Central Government.

Now, therefore, in exercise of the powers conferred by section 23 of the Prevention of Food Adulteration Act, 1954 (37 of 1954), the Central Government, after consultation with the Central Committee for Food Standards, hereby makes the following rules further to amend the Prevention of Food Adulteration Rules, 1955, namely :-

RULES

1. (1) These rules may be called the Prevention of Food Adulteration (7th Amendment) Rules, 2000.

(2) They shall come into force on 29-3-2001

2. In the Prevention of Food Adulteration Rules, 1955,-

(iv) in rule 42, in sub-rule (zzz), after clause (13), the following clause shall be inserted, namely:-

"(14) Every package of drinking water shall carry the following declaration in capital letters having the size of each letter as prescribed in rule 36 ;

PACKAGED DRINKING WATER

(ii) in rule 49, after sub-rule (27), the following sub-rule shall be inserted, namely:-

"(28) No person shall manufacture, sell or exhibit for sale packaged drinking water except under the Bureau of Indian Standards Certification Mark";

(iii) in Appendix 'B' after item A.32, the following item shall be inserted, namely:-

A.33 **Packaged drinking water (other than Mineral water):-**

TERMINOLOGY "Packaged drinking water" means water derived from any source of potable water which is subjected to treatments, namely, decantation, filteration, combination of filteration, aerations, filteration with membrane filter, depth filter, cartridge filter, activated carbon filteration, demineralisation, remineralisation reverse osmosis and packed. It may be disinfected to a level that will not lead to harmful contamination in the drinking water. It may be disinfected by means of chemical agents and/or physical method of the number of micro-organism to a level that does not compromise food safety or suitability.

PACKAGING It shall be packed in clean, sterile, colourless, transparent and tamperproof bottles/containers made of polyethylene (PE) conforming to IS:10146 or polyvinyl chloride (PVC) conforming to IS : 10151 or polyalkylene terephthalate (PET and PBT) conforming to IS : 12252 or polypropylene conforming to IS:10910 or foodgrade polycarbonate 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.

It shall conform to the following standards namely :-

Sl. No.	Characteristics	Requirements
(1)	(2)	(3)
(1)	Colour	not more than 2 Hazen Units/ True Colour Units
(2)	Odour	Agreeable
(3)	Taste	Agreeable
(4)	Turbidity	Not more than 2 nephelometric turbidity unit (NTU)
(5)	Total Dissolved Solids	Not more than 500 mg/litre

(1)	(2)	(3)
(6)	PH	6.5 – 8.5
(7)	Nitrates (as NO_3)	Not more than 45 mg/litre
(8)	Nitrites (as NO_2)	Not more than 0.02 mg/litre
(9)	Sulphide (as H_2S)	Not more than 0.05 mg/litre
(10)	Mineral oil	Not more than 0.01 mg/litre
(11)	Phenolic compounds (as C_6H_5OH)	Not more than 0.001 mg/litre
(12)	Manganese (as Mn)	Not more than 0.1 mg/litre
(13)	Copper (as Cu)	Not more than 0.05 mg/litre
(14)	Zinc (as Zn)	Not more than 5 mg/litre
(15)	Fluoride (as F)	Not more than 1.0 mg/litre
(16)	Barium (as Ba)	Not more than 1.0 mg/litre
(17)	Antimony (as Sb)	Not more than 0.005 mg/litre
(18)	Nickel (as Ni)	Not more than 0.02 mg/litre
(19)	Borate (as B)	Not more than 5 mg/litre
(20)	Anionic surface active agents (as MBAS)	Not more than 0.2 mg/litre
(21)	Silver (as Ag)	Not more than 0.01 mg/litre
(22)	Chlorides (as Cl)	Not more than 200 mg/litre
(23)	Sulphate (as SO_4)	Not more than 200 mg/litre
(24)	Magnesium (as Mg)	Not more than 30 mg/litre
(25)	Calcium (as Ca)	Not more than 75 mg/litre
(26)	Sodium (as Na)	Not more than 200 mg/litre
(27)	Alkalinity (as HCO_3)	Not more than 200 mg/litre
(28)	Arsenic (as As)	Not more than 0.05 mg/litre
(29)	Cadmium (as Cd)	Not more than 0.01 mg/litre
(30)	Cyanide (as CN)	Not more than 0.05 mg/litre
(31)	Chromium (as Cr)	Not more than 0.05 mg/litre
(32)	Mercury (as Hg)	Not more than 0.001 mg/litre
(33)	Lead (as Pb)	Not more than 0.01 mg/litre
(34)	Selenium (as Se)	Not more than 0.01 mg/litre
(35)	Iron (as Fe)	Not more than 0.1 mg/litre
(36)	Poly nuclear aromatic hydrocarbons	Not detectable
(37)	Polychlorinated biphenyle (PCB)	Not detectable
(38)	Aluminium (as Al)	Not more than 0.03 mg/litre
(39)	Residual free chlorine	Not more than 0.2 mg/litre
(40)	Pesticide Residues	below detectable limits
(41)	"Alpha" activity	Not more than 0.1 Bacquerel/litre (Bq)
(42)	"Beta" activity	Not more than 1 pico curie/litre (pCi)
(43)	Yeast and mould counts 1 x 250 ml	Absent

(1)	(2)	(3)
(44)	Salmonella and Shigella 1 x 250 ml	Absent
(45)	E.Coli or thermotolerant bacteria 1 x 250 ml	Absent
(46)	Coliforma bacteria 1 x 250 ml	Absent
(47)	Faecal streptococci and Staphylococus aureus 1 x 250 ml	Absent
(48)	Pseudomonas aeruginosa 1 x 250 ml	Absent
(49)	Sulphite-reducing anaerobes 1 x 50 ml	Absent
(50)	Vibrio cholera and V. parahaemolyticus 1 x 250 ml	Absent
(51)	Aerobic Microbial Count	The total viable colony count shall not exceed 100 per ml at 20°C to 22°C in 72 h on agar – agar or on agar – gelatin mixture, and 20 per ml at 37°C in 24 h on agar-agar.

Labelling Prohibitions

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.

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

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 such waters put on sale is prohibited.

[No. P-15014/6/97-P.H. (Food)]

DEEPAK GUPTA, Jt. Secy

Foot Note:—The Prevention of Food Adulteration Rules, 1955 were published in Part II, Section 3 of the Gazette of India vide SRO 2105 dated the 12-9-1955 and were last amended vide G.S.R. 716 (E) dated 13-9-2000.

Printed by the Manager, Govt. of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

IS No.	Title
(Part 5) : 1976	Isolation, identification and enumeration of *Vibrio cholerae* and *Vibrio parahaemolyticus* (*first revision*)
10146 : 1982	Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water
10148 : 1982	Positive list of constituents of polyvinyl chloride (PVC) and its copolymers in contact with foodstuffs, pharmaceuticals and drinking water
10151 : 1982	Polyvinyl chloride (PVC) and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water
10500 : 1991	Drinking water (*first revision*)
12252 : 1987	Polyalkylene terephthalates (PET and PBT) for their safe use in contact with foodstuffs, pharmaceuticals and drinking water
13428 : 1998	Packaged natural mineral water (*first revision*)
14194	Radionuclides in environmental samples — Methods of estimation:
(Part 1) : 1994	Gross beta activity measurement
(Part 2) : 1994	Gross alpha activity measurement

ANNEX B

(*Clause* 5)

HYGIENIC PRACTICES

B-1 FIELD OF APPLICATION

The hygienic practices cover the appropriate general techniques for collecting drinking water, its treatment, bottling, packaging, storage, transport, distribution and sale for direct consumption, so as to guarantee a safe, healthy and wholesome product.

B-2 HYGIENE PRESCRIPTIONS FOR COLLECTION OF DRINKING WATER

B-2.1 Extraction or Collection

In the case of extraction or collection of water intended for packaging from ground water sources, it should be ensured that it is safe from pollution, whether caused by natural occurrence or actions or neglect or ill-will.

B-2.2 If water to be processed for packing is obtained from any other potable source it should be protected from its being contaminated.

B-2.3 The firms using waters from drinking water systems intended for packaging, should ensure that it meets the requirements of the standard.

B-2.4 Materials

The pipes, pumps or other possible devices coming into contact with water and used for its collection should be made of such material that they do not change the quality of water.

B-3 PROTECTIVE MEASURES

B-3.1 All possible precautions should be taken within the protected perimeter to avoid any pollution of, or external influence on, the quality of the ground or surface water. Preventive measures should be taken for disposal of liquid, solid or gaseous waste that could pollute the ground or surface water. Drinking water resources should not be in the path of potential source of underground contamination.

B-3.2 Protection of the Area of Origin

The immediate surroundings of the extraction or collection area should be protected by limiting access to authorized persons only. Wellheads and spring outflows should be protected by a suitable structure to prevent entry by unauthorized individuals, pests and other sources of extraneous matter.

B-4 TRANSPORT OF DRINKING WATER

B-4.1 Means of Transport, Piping and Reservoirs

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

B-4.2 Maintenance of Vehicles and Reservoirs

Any vehicle or reservoir should be properly cleaned and, if necessary, disinfected and kept in good repair so as not to present any danger of contamination to drinking water and of deterioration of its quality.

B-5 ESTABLISHMENT FOR PROCESSING OF DRINKING WATER — DESIGN AND FACILITIES

B-5.1 Location

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

B-5.2 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.

B-5.3 Buildings and Facilities

B-5.3.1 *Type of Construction*

Buildings and facilities should be of sound construction and maintained in good repair.

B-5.3.2 *Disposition of Holding Facilities*

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

B-5.3.3 Adequate working space should be provided to allow for satisfactory performance of all operations.

B-5.3.4 The design should be such as to permit easy and adequate cleaning and to facilitate proper supervision of hygiene for drinking water.

B-5.3.5 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.

B-5.3.6 Buildings and facilities should be designed to facilitate hygienic operations by means of a regulated flow in the process from the arrival of the drinking water at the premises to the finished product, and should provide for appropriate conditions for the process and the product.

B-5.3.7 *Drinking Water Handling, Storing and Bottling Areas*

B-5.3.7.1 *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 have sufficient slope for liquids to drain to trapped outlet.

B-5.3.7.2 *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 smoothen to facilitate cleaning.

B-5.3.7.3 *Ceilings*

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

B-5.3.7.4 *Windows*

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 should be sloped to prevent use as shelves.

B-5.3.7.5 *Doors*

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

B-5.3.7.6 *Stairs, lift cages and auxillary structures*

Platforms, ladders, chutes, should be so situated and constructed as not to cause contamination to drinking water. Chutes should be constructed with provision of inspection and cleaning hatches.

B-5.3.7.7 *Piping*

Piping for drinking water lines should be independent of non-potable water.

B-5.3.8 In drinking water handling areas all overhead structures and fittings should be installed in such a manner as to avoid contamination directly or indirectly of drinking 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 growth and flaking. They should be easy to clean.

B-5.3.9 Living quarters, toilets and areas where animals are kept should be completely separated and should not open directly on to drinking water handling areas.

B-5.3.10 Where appropriate, establishments should be so designed that access can be controlled.

B-5.3.11 The use of material which cannot be adequately cleaned and disinfected, such as wood, should be avoided unless its use would not be a source of contamination.

B-5.3.12 *Canalization, Drainage Lines*

Canalization and drainage and used water lines should be built and maintained in such a manner as not to

present any risk whatsoever of polluting the underground water source.

B-5.3.13 *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 pollution during the storage and manipulation of these fuels.

B-5.4 Hygienic Facilities

B-5.4.1 *Water Supply*

B-5.4.1.1 Ample supply of potable water under adequate pressure and of suitable temperature should be available with adequate facilities for its storage, where necessary, and distribution with adequate protection against contamination. The potable water should conform to the standard for drinking water (*see* IS 10500).

B-5.4.1.2 Potable water, non potable water for steam production or for refrigeration or for any other use should be carried in separate lines with no cross connection between them and without any chance of back siphonage. It would be desirable that these lines be identified by different colours.

B-5.4.2 *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 the full loads and should be so constructed as to avoid contamination of potable water supplies.

B-5.4.3 *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 lighted, ventilated and should not open directly on to drinking 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 will have to use 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 each washing facility. Care should be taken that these receptacles for used paper towels are regularly emptied. Taps of a non-hand operatable type are desirable. Notices should be posted directing personnel to wash their hands after using the toilet.

B-5.4.4 *Hand Washing Facilities in 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 should be available and taps for mixing the two 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 operatable type are desirable. The facilities should be furnished with properly trapped waste pipes leading to drains.

B-5.4.5 *Disinfection Facilities*

Where appropriate, adequate facilities for cleaning and disinfection of 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.

B-5.4.6 *Lighting*

Adequate 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.

Suspended light bulbs and fixtures in any stage of production should be of a safer type and protected to prevent contamination of drinking water in case of breakage.

B-5.4.7 *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.

B-5.4.8 *Facilities for Storage of Waste and Inedible Material*

Facilities should be provided for the storage of waste and inedible material prior to removal from the establishment. These facilities should be designed to prevent access to waste or inedible material by pests and to avoid contamination of drinking water; equipment, buildings or roadways on the premises.

B-5.5 Equipment and Utensils

B-5.5.1 *Materials*

All equipment and utensils used in drinking water handling areas and which may contact the drinking water should be made of material which does not transmit toxic substances, odour or taste, is non-absorbent, is resistant to corrosion and is capable of withstanding repeated cleaning and disinfection. Surfaces should be smooth and free from pits and crevices. The use of wood and other materials which cannot be adequately cleaned and disinfected should be avoided except when their use would not be a source of contamination.

B-5.5.2 *Hygienic Design, Construction and Installation*

B-5.5.2.1 All equipment and utensils should be so designed and constructed as to prevent hazards and permit easy and thorough cleaning and disinfection.

B-6 ESTABLISHMENT

B-6.1 Maintenance

The buildings, equipment, utensils and all other physical facilities of the establishment, including drains, should be maintained in good repair and in an orderly condition.

B-6.2 Cleaning and Disinfection

B-6.2.1 To prevent contamination of drinking water, all equipment and utensils should be cleaned as frequently as necessary and disinfected whenever circumstances demand.

B-6.2.2 Adequate precautions should be taken to prevent drinking water from being contaminated during cleaning or disinfection of rooms, equipment or utensils, by wash water and detergents or by disinfectants and their solutions. Detergents and disinfectants should be suitable for the purpose intended. Any residues of these agents on a surface which may come in contact with drinking water should be removed by thorough rinsing with water, before the area or equipment is again used for handling drinking water.

B-6.2.3 Either immediately after cessation of work for the day or at such other times as may be appropriate, floors, including drains, auxiliary structures and walls of water handling areas should be thoroughly cleaned.

B-6.2.4 Changing facilities and toilets should be kept clean at all times.

B-6.2.5 Roadways and yards in the immediate vicinity of and serving the premises should be kept clean.

B-6.3 Hygiene Control Programme

A permanent cleaning and disinfection schedule should be drawn up for establishment to ensure that all areas are appropriately cleaned and that critical areas, equipment and material are designated for special attention. An individual, who should preferably be a permanent member of the staff of the establishment and whose duties should be independent of production, should be appointed to be responsible for the cleanliness of the establishment. He should have a thorough understanding of the significance of contamination and the hazards involved. All cleaning personnel should be well-trained in cleaning techniques.

B-6.4 Storage and Disposal of Waste

Waste material should be handled in such a manner as to avoid contamination of drinking water. Care should be taken to prevent access to waste by pests. Waste should be removed from the 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.

B-6.5 Exclusion of Animals

Animals that are uncontrolled or that could be a hazard to health should be excluded from establishments.

B-6.6 Pest Control

B-6.6.1 There should be an effective and continuous programme for the control of pests. Establishments and surrounding areas should be regularly examined for evidence of infestation.

B-6.6.2 If pests gain entrance to the establishment, eradication measures should be instituted. Control measures involving treatment with chemical, physical or biological agents should only be undertaken by or under direct supervision of personnel who have a thorough understanding of the potential hazards to health resulting from the use of these agents, including those hazards which may arise from residues retained in the drinking water.

B-6.6.3 Pesticides should only be used if other precautionary measures cannot be used effectively. Before pesticides are applied, care should be taken to safeguard drinking water, equipment and utensils from contamination. After application, contaminated equipment and utensils should be thoroughly cleaned to remove residues prior to being used again.

B-6.7 Storage of Hazardous Substances

B-6.7.1 Pesticides or other substances which may present a hazard to health should be suitably labelled

with a warning about their toxicity and use. They should be stored in locked rooms or cabinets, and dispensed and handled only by authorized and properly trained personnel under strict control and under strict supervision of trained personnel. Extreme care should be taken to avoid contamination.

B-6.7.2 Except when necessary for hygienic or processing purposes, no substance which could contaminate drinking water should be used or stored in drinking water handling areas.

B-6.8 Personal Effects and Clothing

Personal effects and clothing should not be deposited in drinking water handling areas.

B-7 PERSONNEL HYGIENE AND HEALTH REQUIREMENTS

B-7.1 Hygiene Training

Managers of establishments should arrange for adequate and continuing training of all water handlers in hygienic handling of water and in personal hygiene so that they understand the precautions necessary to prevent contamination of drinking water.

B-7.2 Medical Examination

Persons who come into contact with drinking water in the course of their work should have a medical examination prior to employment if the official agency having jurisdiction, acting on medical advice, considers that this is necessary, whether because of epidemiological considerations or the medical history of the prospective water handler. Medical examination of water handlers should be periodically carried out and when clinically or epidemiologically indicated.

B-7.3 Communicable Diseases

The management should take care to ensure that no person, whether known or suspected to be suffering from, or to be a carrier of a disease likely to be transmitted or afflicted with infected wounds, skin infections, sores or diarrhoea, is permitted to work in any drinking water handling area in any capacity in which there is any likelihood of such a person directly or indirectly contaminating drinking water with pathogenic micro-organisms. Any person so affected should immediately report to the management.

B-7.4 Injuries

Any person who has a cut or wound should not continue to handle drinking water or contact surfaces until the injury is completely protected with a waterproof covering which is firmly secured, and which is conspicuous in colour. Adequate first-aid facilities should be provided for this purpose.

B-7.5 Washing of Hands

Every person, while on duty in a drinking water handling area, should wash the hands frequently and thoroughly with a suitable hand cleaning preparation under running warm water. Hands should always be washed before commencing work, immediately after using the toilet, after handling contaminated material and whenever else necessary. After handling any material which might be capable of transmitting disease, hands should be washed and disinfected immediately. Notices requiring hand-washing should be displayed. There should be adequate supervision to ensure compliance with this requirement.

B-7.6 Personal Cleanliness

Every person engaged in a drinking water handling area should maintain a high degree of personal cleanliness while on duty, and should, at all times while so engaged, wear suitable protective clothing including head covering and footwear, all of which should be cleanable, unless designed to be disposed off and should be maintained in a clean condition consistent with the nature of the work in which the person is engaged. Aprons and similar items should not be washed on the floor. When drinking water is manipulated by hand, any jewellery that cannot be adequately disinfected should be removed from the hands. Personnel should not wear any insecure jewellery when engaged in handling drinking water.

B-7.7 Personal Behaviour

Any behaviour which could result in contamination of drinking water, such as eating, use of tobacco, chewing (for example gum, sticks, betel nuts, etc) or unhygienic practices such as spitting, should be prohibited in drinking water handling areas.

B-7.8 Visitors

Precautions should be taken to prevent visitors as far as possible from visiting the drinking water handling areas. If unavoidable, the visitors should observe the provisions of **B-6.8** and **B-7.3**.

B-7.9 Supervision

Responsible for ensuring compliance by all personnel with all requirements of **B-6.1** to **B-6.8** and the responsibility should be specifically allocated to competent supervisory personnel.

B-8 ESTABLISHMENT: HYGIENIC PROCESSING REQUIREMENTS

B-8.1 Raw Material Requirements

To guarantee a good and stable quality of drinking water, the quality criteria should be monitored regularly.

B-8.2 Should there be a perceptible lacking in meeting the requirements, necessary corrective measures are immediately to be taken.

B-8.3 Treatment

The treatment may include decantation, filtration, combination filtration (for example membrane filters, depth filters, cartridge filters, activated carbon), demineralization, reverse osmosis, aeration, and disinfection.

B-8.3.1 Processing should be supervised by technically competent personnel.

B-8.3.2 All steps in the production process, including packaging, should be performed without unnecessary delay and under conditions which will prevent the possibility of contamination, deterioration, or the growth of pathogenic and spoilage micro-organisms.

B-8.3.3 Rough treatment of containers should be avoided to prevent the possibility of contamination of the processed product.

B-8.3.4 Treatment are necessary controls and should be such as to protect against contamination or development of a public health hazard and against deterioration within the limits of good commercial practice.

B-8.4 Packaging Material and Containers

B-8.4.1 All packaging materials should be stored in a clean and hygienic manner. The material should be appropriate for the product to be packed and for the expected conditions of storage and should not transmit to the product objectionable substances beyond the limits specified. The packaging material should be sound and should provide appropriate protection from contamination. Only packaging material required for immediate use should be kept in the packing or filling area.

B-8.4.2 Product containers should not have been used for any purpose that may lead to contamination of the product. In case of new containers if there is a possibility that they have been contaminated, should be cleaned and disinfected. When chemicals are used for these purposes, the container should be rinsed. Containers should be well drained after rinsing. Used and, when necessary, unused containers should be inspected immediately before filling.

B-8.5 Filling and Sealing of Containers

B-8.5.1 Packaging should be done under conditions that preclude the introduction of contaminants in the product.

B-8.5.2 The methods, equipment and material used for sealing should guarantee a tight and impervious sealing and should not damage the containers nor deteriorate the physical, chemical, microbiological and organoleptic qualities of drinking water.

B-8.6 Packaging of Containers

The packaging of containers should protect the latter from contamination and damage and allow appropriate handling and storing.

B-8.7 Lot Identification

Each container shall be permanently marked with code to identify the producing factory and the lot. A lot is quantity of drinking water produced under identical conditions, all packages of which should bear a lot number that identifies the production during a particular time, interval, and usually from a particular 'processing line' or other processing unit.

B-8.8 Processing and Production Records

Permanent, legible and dated records of pertinent processing and production details should be kept concerning each lot. These records should be retained for a period that exceeds the shelf life of the product or longer if required. Records should also be kept of the initial distribution by lot.

B-8.9 Storage and Transport of the End-Product

The end-product should be stored and transported under such conditions as will preclude contamination with and/or proliferation of micro-organisms and protect against deterioration of the product or damage to the container. During storage, periodic inspection of the end-product should take place to ensure that only drinking water which is fit for human consumption is despatched and that the end-product specifications are complied with.