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उत्पाद मैन्युअल
पैकेजबंद पेय जल (पैकेजबंद प्राकृतिक मिनिरल जल के अलावा) - विशिष्टि
IS 14543:2024 के अनुसार

PRODUCT MANUAL FOR
Packaged Drinking Water (other than Packaged Natural Mineral Water) — Specification
ACCORDING TO IS 14543:2024

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations,2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	मानक संख्या **IS No.**	:	IS 14543: 2024
	शीर्षक **Title**	:	Packaged Drinking Water (other than Packaged Natural Mineral Water) — Specification
	संशोधनों की संख्या **No. of amendments**	:	NIL
2.	उत्पाद विशिष्ट दिशानिर्देश: **Product Specific Guidelines:**		
a)	लाइसेंस प्रदान करने और लाइसेंस के दायरे में बदलाव के लिए आवेदनों पर कार्रवाई के लिए दिशानिर्देश **Guidelines for processing applications for grant of licence and change in scope of licence**	:	Please refer Annex-A
b)	निगरानी के लिए दिशानिर्देश **Guidelines for surveillance**	:	Please refer Annex-B

c)	अनुपालन न होने की स्थिति में निलंबन और निलंबन रद्द करने सहित कार्रवाई के लिए दिशानिर्देश **Guidelines for action in case of non-conformity including suspension and revocation of suspension**		Please refer Annex-C
3.	परीक्षण उपकरणों की सूची **List of Test Equipment**	:	Please refer to Annex-D
4.	निरीक्षण और परीक्षण की स्कीम **Scheme of Inspection and Testing**	:	Please refer to Annex-E
5.	विशेष स्थितियों के लिए दिशानिर्देश **Guidelines for Special Situations**	:	Please refer to Annex-F
6.	स्वच्छता जांच सूची **Hygiene Checklist**	:	Please refer ANNEX –G (It shall be verified, filled up, duly signed and uploaded as an attachment along with the Factory Test report. Hygiene assessment shall be done during al inspections (Preliminary inspection, Surveillance inspection, Verification inspection)
7.	लाइसेंस का दायरा **/Scope of the Licence:**		
	Licence is granted to use Standard Mark as per IS 14543:2024 with the followingscope:		
	Name of the product	Packaged Drinking Water (other than Packaged Natural Mineral Water)	
	Varieties (Packaging)	Type of containers (such as bottles, jars, pouches,cups etc.) Type/form of container material (such as Polyethylene (PE), Polyethylene terephthalate (PET), Polypropylene (PP), Polycarbonate (PC) etc.)	

ANNEX-A

Product Specific Guidelines for processing applications for grant of licence and change in scope of licence

A-1. Application for grant of licence

i. Domestic manufacturers of PDW shall apply for grant of licence for his unit online through the Manakonline system as per the provided application format i.e. as per Form V as specified in Scheme I of Schedule II of BIS (Conformity Assessment Regulations), 2018. (Presently foreign applications under FMCS are being processed on offline mode).

ii. Applications will only be accepted under **Option 1** (**Normal procedure**), i.e. after receipt of the application and ensuring completeness of the application, a visit will be paid by BIS to the factory of the applicant for assessment of the manufacturing infrastructure, production process, quality control and testing capabilities, assessment of hygiene conditions and sample will be drawn for testing in third party laboratory.

A-2 **Preliminary Inspection**

A-2.1 During preliminary inspection, the documents/aspects as mentioned in general GoL guidelines shall be verified and the observations recorded in the Preliminary Inspection Report in the format circulated by CMD.

A-2.2 The actual factory layout shall be verified against the layout submitted with application. The layout should clearly indicate the different locations preferably including the following:

a) Bore well or entry point for the source of raw water, pipeline etc.
b) Raw water storage facility
c) Plant for the manufacture of the product (with various stages)
d) Filling/packing areas, change room, toilet(s),
e) Entry/exit with indications of double door/door closures/Air curtains wherever provided
f) Stores for packaging material and finished product
g) Laboratory
h) Actual boundary/perimeter of the establishment
i) If the premises are also used for residential quarters/other purposes, then specific mention of the same be made with identified locations.

A-2.3 As product is under mandatory certification, it is unlikely to be in “production” during PI. It is therefore essential to get some production & filling/packing done as ‘Trial Batch’ during the visit and then make comments on the firm’s capability for the same.

A-2.4 It should be clearly reported in the PIR as to whether the filling/packaging adopted are manually operated or automatic. It may be noted that the plastic cups, tumbler, pouch, bottles are required to be filled only through automatic machine. However, jars maybe filled manually also.

A-2.5. In addition, the following product specific aspects shall also be verified and observations recorded in the Preliminary Inspection Report or in an Annexure to that report:

i. Availability of all manufacturing facilities including filling and/or packaging machinery for the varieties applied for to be verified and observations recorded;

ii. Compliance to hygienic practices as per Annex B of IS 14543, to be verified and **observations to be recorded as per Hygiene Checklist (as per Annex-G).**

iii. As per Cl 5.1.1 of IS 14543, Water shall be derived from surface water or civic water supply or underground water or sea water or any other consistent source of water. **Source of Water shall be identified and observations reported in the Preliminary Inspection report (e.g. Civic Water supply or Borewell water)**

iv. As per Cl 5.1.1 of IS 14543, source water shall be subjected to specified treatments, namely, decantation, distillation, filtration, combination of filtration, aerations, filtration with membrane filter, sand filters, cartridge filter, activated carbon filtration, demineralization, remineralization, reverse osmosis and packed after disinfecting the water to a level that shall not lead to any harmful effect in the drinking water by means of chemical agents or physical methods to reduce the number of micro-organisms to a level below scientifically accepted level for food safety or its suitability: Provided that sea water, before being subjected to the above treatments, shall be subjected to desalination and related processes. **Nature of treatments/disinfection processes, Process description and observations thereon to be reported (This may be mentioned in the process flowchart submitted.)**

v. **In case the manufacturer conducts remineralization as part of treatment process, the ingredients shall be of food/pharma grade quality.** The test certificate indicating the individual ingredients and the respective compositions of each mineral/ingredient in the product shall be submitted by the applicant at the time of application. If remineralization is part of treatment process, **DO has to record the same to reflect in RF at the time of recommendation**.

vi. Availability of required testing facilities, as per the ISS and SIT shall be verified and recorded. The test equipment should have valid calibration on the day of the visit. Calibration should be done from NABL accredited laboratory or any other laboratory provided traceability to NPL is established through the calibration certificates. Calibration of Analytical Balance, temperature indicators and pressure gauge of autoclave (internal/in-house or from an outside lab.) is considered necessary at least once a year. Indicative List of test equipment and chemicals required for testing of packaged water is given at **Annex D** for guidance**. Status of test equipment calibration observed from calibration certificates should be verified and recorded**

vii. Testing person(s) shall be science/engineering graduate from disciplines such as chemistry/chemical engineering/ microbiology/ biotechnology/ biochemistry/ food technology/ botany and other biological/ life sciences. Engineering graduates from disciplines such as chemical engineering may also be engaged as testing persons. **Availability of testing person(s), his/her competence, qualifications and experience shall be verified and reported.** One testing personnel may be allowed in case he/she is found competent for both chemical and microbiological testing and if so, this shall be duly recorded in Inspection Report.

A-3 Factory testing

A-3.1 One sample of the product shall be tested in the factory during the preliminary inspection for preferably following requirements**:** Description, Colour, Odour, Taste, Turbidity, Total Dissolved Solids (TDS) by gravimetric method as per IS 3025(Part-16), pH, Chloride, Alkalinity, and Residual Free Chlorine.

A-3.2 In case any non-conformity is observed during factory testing, no sample shall be drawn for independent testing in third party lab. (Please refer Annex C for guidelines to be followed in case of non-conformity).

A-4 Sample for Independent Testing

A-4.1 If the sample passes in factory testing, sample of packaged drinking water shall be drawn and sent for complete testing for all requirements of the Indian Standard.

A-4.2 Further, the separate samples of each type of container material (PE, PET, PP, PC etc.) and Type/form of containers (such as bottles, jars, pouches etc) shall also be drawn (e.g. in case a manufacture has applied for PDW in i)20 L PET jar, ii) 500 ml PET bottle, iii) 1L PET bottle, iv) 500ml PC bottle, & v) 1 L PC bottle, only three sample of container are required to be drawn along with PDW sample. (one container sample each of 20 L PET jar, 500 ml or 1 L PET bottle and 500ml or 1 L PC bottle shall be drawn).

A-4.3 The following details should be mentioned in the test request (generated through Manakonline):

i. Date of manufacture/packing and batch number;

ii. Expiry/Use by;

iii. Quantity (number of containers and total quantity of packaged water in litre or milliliter),

iv. Type, material and capacity of containers

v. Declared wall thickness of container(s) for Top, Middle and Bottom / width of film of pouch

A-4.4 In case of foreign manufacturers, test request through Manakonline - LIMS is not applicable, till applicants/licencees under FMCS are brought on online mode, integrated with Manakonline - LIMS.

A-4.5 In cases where the manufacturer intends to cover more than one capacity variety of packaging in the scope of licence, he need not offer samples of each capacity variety of packaging during the factory visit (preliminary inspection) for testing in third party lab. However, it shall be ensured that the manufacturing facilities for manufacturing other packing sizes (if applicable) like moulding machines, etc. are available. He may offer sample of the product in at least one variety of packaging, along with either:

a. Conforming tests reports issued by BIS recognized labs (through LIMS only) for the other capacity varieties of packaging/containers intended to be covered in the scope of the licence. These test reports issued through LIMS, shall not be older than 90 days on the date of submission of application.

   Note: In case an application is received for more than one type of container and the variety of the container drawn during preliminary inspection, does not conform to the requirements of the Indian Standard, however the product (Packaged Drinking water) is found conforming to all the requirements of the Indian Standard, then the application may be processed for Grant of Licence for all those type of container packaging, whose

conforming test report has been submitted with the application. Under such circumstances, the type of container, which has not been found conforming to the requirements of relevant Indian Standard, shall be excluded from the scope. Further there may be a situation when applicant has applied for one type only and the container is found failing but the product (PDW) is passing. Under such circumstances, only the improved sample of the container as offered by the manufacturer, maybe tested for conformity to the requirements of the relevant Indian Standard for processing the application.

OR

b. In case the applicant uses/intends to use ISI Marked Plastic Containers as per IS 15410 or ISI Marked polyethylene flexible pouches as per IS 15609 or ISI marked aluminum cans as per IS 18285:2023, the manufacturer may submit a consent letter from the BIS licensed manufacturer of the container, that he has agreed to supply ISI Marked containers for the required varieties (to be explicitly mentioned in the letter) to the applicant firm. In that case test reports from third party labs need not be submitted for those varieties. The letter from BIS licensed manufacturers shall not be older than 90 days on the date of submission of application. The test certificates of the containers issued as per relevant Indian Standard(s) by the BIS licensed manufacturer is required to be submitted at the time of submission of application / before inspection, for examination by BIS.

OR

c. In case the applicant intends to use Paper based multilayer laminated/extruded composite cartons for packaging as per IS 17753, the case shall be sent by BO to CMD-2 with complete information and recommendation. CMD-2 shall review all such cases and decide on approval and communicate to BO till further guidelines in this matter are issued.

A-4.6 In case the applicant is adopting more than one type of processes/sources of raw water, separate samples shall be drawn for each process/source. (In the event of more than one bore well /open well located in the same premises, they shall be considered as a single source for the purpose of drawing of sample of Packaged Drinking Water as well as for exercising quality control, provided there is only one processing line.)

A-4.7 The sample quantity to be sent to the third-party lab for testing is as follows:

(i) Packaged Drinking Water

a) For all parameters other than radioactive residues - A sample containing approximately 18 litres of packaged water (PDW) in two parts is adequate, if packed in 1 liter or smaller containers but in case the samples are available in large size packages (eg. 20 L jars), minimum two such packages are required as microbiological laboratory needs separate sample for ensuring aseptic handling. For example:

Capacity of the container (cup/bottle/jar) in litres	Number of containers to be drawn
1	18
2	9
5	4
10	2
20	2
25	2

For Pouches: 2 bags/cartons each containing total of at least 100 pouches + Film.

b) For Parameters concerning Radio-active Residue

In addition to the above, sample shall also be drawn for testing parameters concerning radioactive residues. A sample of 10 litres is adequate.

(ii) Sample of packaging material (containers):

Capacity of the container (cup/bottle/jar/can) in ml/L	Number of containers (including caps) to be drawn
200ml	30(empty with caps) + 9(filled)+40 caps
250ml	27 (empty with caps) + 9 (filled) + 40 (caps)
500ml	24 (empty with caps) + 9 (filled) +40 caps
1 liter	21 (empty with caps) + 9 (filled) + 40 caps
2 litre	18 Empty (with caps) + 8 (filled) + 40caps
5 litre and above	7 Empty (with caps) + 8 (filled) + 25 caps

Pouches: 1 bag of 50 filled pouches + 18-meter film+ 10 Nos. of Preformed pouches of dimension 125 mm X 200 mm.

Cup/Glass along with peelable seal: 37 (Empty) + 15 (filled) + 18-meter film of peelable seal + 8 preformed pouches of 125 mm x 200 mm of peelable seal.

Aluminium cans: equivalent quantity as above.

Note 1: The pouches shall be made in the presence of BIS officer, during inspection, and, may be printed with only details like batch number, date of manufacturing, Expiry/Use by, capacity, using ink to be used by the manufacturer for marking on the pouches. This will facilitate testing of pouches for ink adhesion test. This is being allowed as manufacturer cannot get the pouch film rollsprinted with all other details such as Standard Mark etc. before the GOL.

Note 2: IS 11984 has been indicated as a reference Indian Standard for glass bottles/tumbler, however such containers need not be tested. However, if any manufacturer intends to use such container, it shall be included in the licence. The separate processing line for filling the glass bottles may be verified by BIS during the next surveillance visit and necessary steps in the process for ensuring sterility of bottles may be adopted like steam sterilizing, hot water rinsing, UV sterilization (except in case of PNMW) or combination thereof. In case of lug caps containing plastic lining, food grade certificate or OSL report for migration testing may be accepted.

Note 3: Effort shall be made, as far as possible, to send samples without the manufacturer's identification and/or markings. Any label and/or manufacturer's identification from the bottles/Jars shall be removed or defaced.

Note 4: The manufacturer's declaration with respect to the minimum wall thickness (Top/Middle/Bottom) of the container and shelf life of product, shall be obtained and the same to be mentioned in the test request.

A-5 Change in Scope of Licence

A-5.1 For the purpose of certification of PDW, change in scope of licence pertains only to addition/deletion of the varieties of packaging covered in the scope of the licence.

A-5.2In case a licensee intends to add new varieties of packaging in scope of licence, he shall submit an application in the Form – XIV along with requisite fee and relevant documents.

A-5.3 In addition, he shall submit conforming third-party lab test report(s) of samples of each variety of the packaging (i.e. each material (PET/PE etc.), form or type (cup/bottle/jar etc.) intended to be added to the scope of licence.

A-5.4 In addition to these guidelines, Guidelines for Grant of Licence (GoL) and Change in Scope of Licence (CSoL) as per the conformity assessment Scheme – I of Schedule –

II of BIS (Conformity Assessment) Regulations, 2018 issued by CMD-1 shall be followed.

ANNEX B

Guidelines for Surveillance

Surveillance consists of two activities in case of Packaged water certification i.e. surveillance visits at factory premises (which includes testing of sample drawn from factory) and drawl of samples from the market for third party lab testing. Product Specific guidelines for these are as follows:

B-1. Factory Surveillance

B-1.1 During factory surveillance visit, the compliance to the requirements of the SIT and ISS shall be verified and the observations recorded in the inspection report.

B-1.2 However, in addition, the following product specific aspects shall also be verified and observations recorded in the Report of Periodic Inspection or in an Annexure to that report:

vi. Any change in manufacturing facilities including filling and/or packaging machinery for the varieties applied for to be verified and observations recorded;

vii. Compliance to hygienic practices as per Annex B of IS 14543 to be verified and observations to be recorded as per Hygiene Checklist at Annex-G of this product manual.

viii. Any change in Source of Water shall be checked for and reported. Any observations including non- compliance to IS requirements to be reported (*e.g. No change in source of water OR change in source of water from borewell to civic water supply, in compliance with IS*)

ix. Any change in nature of treatments/disinfection processes to be verified and observations including compliance thereon to be reported (This may be mentioned in the process flowchart submitted.)

x. **In case the manufacturer conducts remineralization as part of treatment process, any change in the ingredients shall be checked for and reported. Further, the ingredients shall be of food/pharma grade quality.** The test certificate indicating the individual ingredients and the respective compositions of each mineral/ingredient in the product shall be obtained from the manufacturer and enclosed with the report. The licensee shall not modify the process without obtaining the consent of BIS. For obtaining consent, they shall submit process flow chart indicating the change in process and declare the addition of machineries if any. Necessary verification of process and machinery shall be done during the next surveillance visit.

xi. As applicable, availability of required testing facilities, as per the ISS and SIT should be verified and recorded. Any change in the test facilities should be checked for and reported. The test equipment should have valid calibration on the day of the visit. Calibration should be done from NABL accredited laboratory or any other laboratory provided traceability to NPL is established through the calibration certificates. Calibration of Analytical Balance, temperature indicators, pressure gauge of autoclave and spectrophotometer (internal/in-house or from outside lab.) is considered necessary at least once a year. Indicative List of test equipment and chemicals required for testing

of packaged water is given at **Annex D** for guidance**. Status of test equipment calibration observed from calibration certificates should be reported.**

xii. Any change in **testing person(s) should be checked for and reported along with comments on the competence, qualifications and experience.**

xiii. **Compliance to requirements of SIT shall be verified and observations reported.**

B-2 Factory testing

B-2.1 One sample of the product shall be tested in the factory during the preliminary inspection for preferably following requirements**:** Description, Colour, Odour, Taste, Turbidity, pH, Chloride, Alkalinity, and Residual Free Chlorine.

B-2.2 In case any non-conformity is observed during factory testing, no sample shall be drawn for independent testing in third party lab. (Please refer Annex C for actions to be taken in case of non- conformity)

B.3 Sample for Independent Testing

B-3.1 If the sample passes in factory testing, sample of packaged drinking water shall be drawn and sent for testing for **all requirements** of the Indian Standard IS 14543:2024 **except the parameters concerning radioactive residues**. However, out of all the samples drawn for factory/market surveillance in a year, only one sample may be got tested for pesticide residues, which is required to be clearly indicated on the test requests generated by BOs/outsourced agencies. But, if a sample fails in the requirement of Pesticide Residues, then the next 3 consecutive samples (factory/market) of that licence shall be tested for all tests including Pesticide Residues (except Radioactive residues), till the 3 consecutive samples are found conforming to all requirements tested including pesticide residues.

The following details should be mentioned in the test request (generated through Manakonline):

i. Date of manufacture or packaging and batch number;

ii. Expiry/Use by or Best Before Days/Months from the date of Packaging/Manufacture;

iii. Quantity (number of containers and total quantity of packaged water in litre or milliliter),

iv. Type, material and capacity of containers

v. Declared wall thickness of container(s)/width of film of pouch

vi. 'All tests/All Chemical tests/All Possible tests, except Pesticide Residues and Radioactive Residues'(where pesticide residue is not required to be tested) And All tests/All Chemical tests/All Possible tests, including Pesticide Residues, but excluding Radioactive Residues (where pesticide residue is required to be tested).

B-3.2 In case the applicant is adopting more than one type of processes/sources of raw water, samples shall be drawn for each process/source by rotation during factory surveillance *(* In the event of more than one bore well /open well located in the same premises, they shall be considered as a single source for the purpose of drawing of sample of Packaged Drinking Water as well as for exercising quality control, provided there is only one processing line.)

B-3.3 The sample quantity to be sent to the third-party lab for testing is as follows:

i) **Packaged Drinking Water**

For all parameters other than radioactive residues - A sample containing approximately 18 litres of packaged water (PDW/PNMW) in two parts is adequate, if packed in 1 liter or smaller containers but in case the samples are available in large size packages, minimum two such packages are required as microbiological laboratory needs separate sample for ensuring aseptic handling.

B-4 Market Surveillance

B-4.1 While obtaining samples of packaged drinking water from the market, it should be ensured that the samples being drawn are bearing genuine ISI mark. This may be done by checking the licence number printed on the label. In case it is found that the ISI mark is spurious, the sample shall not be drawn for testing and further investigation/suitable action should be initiated.

B-4.2 For sending the market sample to the lab for testing, the following details should be mentioned in the test request (generated through Manakonline):

i. 'Date of manufacture or packaging' and 'Expiry/Use by;
ii. Best before date (optional);
iii. Quantity (number of containers and total quantity of packaged water in litre or milliliter),
iv. Type, material and capacity of containers

B-4.3 Separate samples of containers need not be drawn during market surveillance for testing. The possible tests on containers (including transparency) will be carried out on the containers of the samples of packaged water drawn for testing requirements as per IS 14543 excluding PR and RAR. This shall be mentioned on the test request.

B-4.4 The sample quantity to be sent to the third-party lab for testing is as follows:

i) Packaged Water

For all parameters other than radioactive residues – A sample containing approximately 18 litres of packaged water (PDW/PNMW) in two parts is adequate, if packed in 1 liter or smaller containers but in case the samples are available in large size packages, minimum two such packages are required as microbiological laboratory needs separate sample for ensuring aseptic handling. For example:

Capacity of the container (cup/bottle/jar) in litres	Number of containers to be drawn
1	18
2	9
5	4
10	2
20	2
25	2

For Pouches: 2 bags of 100 pouches each + Film. A sample of 4 bags shall be drawn in case each bag contains 50/60 pouches.

ANNEX C

Guidelines for actions in case of non-conformity including suspension and revocation of suspension of licence

C-1.1 Guidelines for dealing with non-conformity of product(s) observed during operation of Licence including product recall, suspension and revocation of suspension under Scheme - I of Schedule - II of BIS (Conformity Assessment) Regulations, 2018 issued by CMD-1 shall apply in case of packaged water. In addition, the following product specific guidelines will apply. Wherever the general and product-specific guidelines are in conflict, the product specific guidelines will take precedence.

C-1.2 Non Conformity of Samples

Non-conformity of containers/packaging material shall not be treated at par with non-conformity of drinking water, since the criticality of the former is lower. Accordingly, **non-conformity in case of drinking water and containers/packaging material shall be treated separately as follows:**

C-1.2.1 Non-conformity of drinking water (IS 14543)

Suspension is normally considered in the event of consecutive non-conformity of samples of other products. However, in case of packaged drinking water suspension shall be imposed on first non-conformity itself if the non-conformity of drinking water is in respect of parameters concerning radioactive residues or pesticide residue or toxicity.

In all other respects, the prevalent Guidelines for dealing with non-conformity of product(s) observed during operation of Licence including product recall, suspension and revocation of suspension under Scheme - I of Schedule - II of BIS (Conformity Assessment) Regulations, 2018 as applicable for all products, shall apply.

C-1.2.2 Non-conformity of container or packaging material (IS 15410 etc)

i. Suspension is normally considered in the event of first consecutive non-conformity of samples of other products. However, for containers/packaging of packaged drinking water, non-conformity is to be considered as consecutive only when the same variety of containers (i.e. the same material, type/form) is found to be non-conforming consecutively.

ii. Suspension shall not be considered in the first instance of consecutive non conformity in case of containers/packaging. The non- conformity shall be communicated to the licensee through email/speed post/IT software with a copy of the test report (as per template given in SUS/ROS guidelines). The licensee shall be advised to take corrective action and submit reply with supporting evidence, as applicable, within 30 days (one month) of the date of communication and offer improved samples for testing.

iii. Suspension may be considered in case licensee fails to submit appropriate corrective actions and/or offer improved samples for testing within the timeline specified. When the corrective actions as mentioned above, are received within 30 days (one month), the DO shall put up the case to the Head BO for nominating an officer for verification of the corrective actions preferably within 90 days through a surveillance inspection.

iv. Since factory testing of containers during surveillance visit may not be feasible in most cases as most manufacturers are procuring containers from outside and do not have in-house testing facilities, the corrective action shall be verified from documents etc as far as possible and improved sample of container shall be drawn for testing for all requirements of the standard (i.e.

IS 15410) in third party lab during surveillance visit

v. **Suspension shall be considered in case of second consecutive non-conformity of same variety of container** i.e. the same material, type/form) and actions as per SUS/ROS guidelines shall be taken.

vi. Revocation of suspension shall be done as per the general Guidelines for Suspension (SUS) and Revocation of Suspension (ROS) of Licence.

vii. In all other respects, the prevalent Guidelines for dealing with non-conformity of product(s) observed during operation of Licence including product recall, suspension and revocation of suspension under Scheme - I of Schedule - II of BIS (Conformity Assessment) Regulations, 2018as applicable for all products, shall apply.

C-2 **Unsatisfactory performance**

C-2.1 In case the following situations are observed, it shall be treated as major modification in process without prior evaluation of the Bureau and shall attract suspension on the first instance itself:

i) Change of source of raw water without evaluation of the Bureau other than the one outside the licensed premises not evaluated by BIS (However, In the event of more than one bore well /open well located in the same premises, they shall be considered as a single source for the purpose of drawing of sample of Packaged Drinking Water as well as for exercising quality control, provided there is only one processing line.)

ii) Modification in the process with or without any change in raw water source, without prior evaluation of BIS. (Any addition or deletion of processing machinery eg. Tanks/RO/Filling machine, etc for capacity enhancement or otherwise, which does not change the overall manufacturing process, will not constitute as modification in the process. A declaration regarding the same may be taken during surveillance in Form-I.)

iii) In all other respects, the prevalent Guidelines for dealing with unsatisfactory performance (other than matters related to non-conformity of the product) during operation of Licence including suspension and revocation of suspension under Scheme - I of Schedule - II of BIS (Conformity Assessment) Regulations, 2018 as applicable for all products, shall apply.

ANNEX D
LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

TABLE 1 - ORGANOLEPTIC AND PHYSICAL PARAMETERS

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Colour	a) Platinum cobalt (visual comparison method) Nessler Tubes — Matched, 50 ml capacity, tall Form, pH Meter, Filter and Filter Assembly and reagents as per IS 3025 (Part 4) b) Spectrophotometric — Single wavelength method Spectrophotometer — capable of operating between 450 and 465 nm with lowest count for adjustable wavelength of 1 nm, pH Meter, Filter and Filter Assembly and reagents as per IS 3025 (Part 4) c) Spectrophotometric — Multi wavelength method. Spectrophotometer — Capable of measuring the transmittance/absorbance at a narrow (10 nm or less) spectral band, and an effective operating range from 400 to 700 nm, along with absorption cell of a minimum of 10 mm path length, pH Meter, Filter and Filter Assembly and reagents as per IS 3025 (Part 4)
2	Odour	Wide-mouth glass-stoppered bottles of about one litre capacity, hydrochloric acid, odour-free distilled water as per IS 3025 (Part 5)
3	Taste	50 ml beaker, water-bath with temperature controller capable of being maintained at a temperature of 15 °C (not to exceed 27 °C), Glass bottles with glass or polytetrafluroethylene lined closures, Taste and odour-free water, 2 000 mg/l solution of sodium chloride prepared with taste and odour-free water as reference sample
4	Turbidity	Sample Tubes, and Nephelometer and reagents as per IS 3025 (Part 10)
5	Total Dissolved Solids	Dishes of 90 mm diameter with 100 ml capacity made of porcelain / platinum / high silica, Wide-Bore Pippets Class B glass, mechanical or electronic, Hot Plate/Block to Maintain <100°C Temperature, Desiccator — Provided with a colour indicating desiccant, Analytical Balance of 200g capacity and capable of weighing to 0.1 mg, Magnetic Stirrer — With teflon coating stirring bars, Glass Fibre Filter Disc — (Whatman GF/C or equivalent) 22 mm to 125 mm dia, ≤ 2 µm nominal pore size without organic binder, Oven — With thermostatic control for maintaining temperature up to 180 °C ± 2°C, Filtering Apparatus, Gooch Crucible — 25 ml to 40 ml capacity, and Suction Flask as per IS 3025 (Part 16)
6	pH	pH meter, Sampling bottle, sealable, flat-bottomed, made of polyethylene or glass, Temperature measurement device, capable of measurement with a total uncertainty not greater than 0.5 °C, Thermometer with a 0.5 °C scale, Temperature sensor, separate or integrated into the pH electrode, Glass electrode and reference electrode, Stirrer or agitator and reagents as per IS 3025 (Part 11)

TABLE 2 – GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

Sl. No.	Tests Used In WithClause Reference	Test Equipment/Chemical
1	Determination of Barium, Copper, Iron, Manganese, Zinc, Silver, Aluminium, Selenium, Calcium, Magnesium, Manganese, Sodium, Antimony and Borates by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) as per IS 3025 (Part 2)	Inductively coupled plasma optical emission spectrometer , Radiofrequency generator, Mass-flow controller, Nebulizer (or ultrasonic nebulizer if required), Argon gas supply, containers of appropriate material (perfluoroalkoxy (PFA), hexafluoroethene propene (FEP) or quartz container is recommended), labware and reagents as per IS 3025 (Part 2)
2	Determination of Barium, Copper, Iron, Manganese, Zinc, Silver, Aluminium, Selenium, Calcium, Magnesium, Manganese, Sodium, Antimony and Borates by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) as per IS 3025 (Part 65)	Mass spectrometer, Nebulizer with variable speed peristaltic pump, Argon gas supply, containers of appropriate material (perfluoroalkoxy (PFA), hexafluoroethene propene (FEP) or quartz container is recommended), labware and reagents as per IS 3025 (Part 65)
3	Determination of Nitrate, Nitrite, Fluoride, Chloride, Sulphate, by Liquid Chromatography of Ions as per IS 3025 (Part 75),	Ion chromatography system consisting of Eluent reservoir, and a degassing unit, Metal-free HPLC pump, Sample injection system, Conductivity detector (CD), Ultraviolet (UV) detector, e.g. a spectrophotometer, Recording device (e.g. a computer with software for data acquisition and evaluation), Precolumns, if necessary and reagents as per IS 3025 (Part 75)
4	Determination of Barium content as per Annex G of IS 13428	Analytical Balance, Hot plate, filter paper, Ammonium Dichromate Solution, Ammonium Acetate Solution, Dilute Ammonium Acetate Wash Solution, Potassium Iodide Solution, Standard Sodium Thiosulphate Solution, Hydrochloric Acid and other labware, reagents as per Annex G of IS 13428
5	Determination of copper content as per IS 3025 (Part 42)	a) Neocuproine Method Spectrophotometer for use at 457 nm with 1 cm cell, pH meter, Neocuproine, ammonium hydroxide, chloroform, hydrochloric acid, hydroxylamine hydrochloride, Isopropyl Alcohol, sodium citrate, nitric acid and sulphuric acid, pure copper, labware and reagents as per IS 3025 (Part 42) b) Atomic Absorption Method (Direct) Atomic Absorption Spectrophotometer - with air-acetylene flame, Copper Hollow Cathode Lamp - for use at 324·7 nm, labware and reagents as per 3025 (Part 42) c) Atomic Absorption (Chelation extraction) Atomic Absorption Spectrophotometer - with air-acetylene flame, Copper Hollow Cathode Lamp - for use at 324·7 nm, labware and reagents as per 3025 (Part 42)
6	Determination of Manganese as per IS 3025 (Part 59)	a) Direct air-acetylene flame atomic absorption spectrometry (AAS) method

		Atomic Absorption Spectrometer and Associated Equipment, labware and reagents as per IS 3025 (Part 59) b) Per sulphate method Colorimetric Equipment i.e. Spectrophotometer — for use at 525 nm, providing a light path of 1 cm or longer or Filter photometer — providing a light path of 1 cm or longer and equipped with a green filter having maximum transmittance near 525 nm with labware and reagents as per IS 3025 (Part 59)
7	Determination of Nitrate as per IS 3025 (Part 34/Sec 1)	a) Cadmium reduction method, and its advanced methods; Reduction column, Colorimetric Equipment i.e. Spectrophotometer — or use near 543 nm with a light path of 1 cm or longer or Filter photometer — provided with a yellow green filter having maximum transmittance near 540 nm and a light path of 1 cm or longer with labware and reagents as per IS 3025 (Part 34/Sec 1) b) Ultraviolet Spectrophotometric screening method; Spectrophotometer for use at 220 nm and 275 nm with matched silica cells of 1 cm or longer light path with labware and reagents as per IS 3025 (Part 34/Sec 1) c) Nitrate electrode method; pH/mv/ISE meter which is capable of measuring 0.1 mv resolution, Nitrate electrode with a double junction electrode or a combined electrode with suitable reference solution (ammonium sulphate) as per manufactures instructions for storage and usage, Magnetic stirrer with teflon bars for constant stirring, labware and reagents as per IS 3025 (Part 34/Sec 1)
8	Determination of Nitrite as per IS 3025 (Part 34/Sec 1)	Spectrophotometer or Photometer for use at 543 nm in case of spectrophotometer having a green filter and having maximum absorbance near 540 nm, Nessler Tubes — matched, 50 ml capacity, labware and reagents as per IS 3025 (Part 34/Sec 1)
9	Determination of Fluoride using i) Ion-selective electrode, or SPANDS methods as per IS 3025 (Part 60/Sec 1) OR ii) Method using flow injection analysis (FIA) and spectrometric detection after off-line Distillation as per IS 3025 (Part 60/Sec 2) OR iii) Method using Continuous Flow	i) Ion-selective electrode, SPANDS methods as per IS 3025 (Part 60/Sec 1) For preliminary distillation step: Distillation Apparatus, Quartz Hemispherical Heating Mantle for full voltage operation, Soft Glass Beads, Magnetic Stirrer, with stirring bar coated with Tetrafluoroethylene (TFE), labware and reagents as per IS 3025 (Part 60/Sec 1) For Ion Selective electrode method: Expanded Scale or Digital pH Meter or Ion Selective Meter, Sleeve Type Reference Electrode, Timer, Magnetic Stirrer, stirring bar coated with TFE, Fluoride electrode, Magnetic Stirrer with labware and reagents as per as per IS 3025 (Part 60/Sec 1)

	Analysis (CFA) with Automated In-line Distillation as per IS 3025 (Part 60/Sec 3)	For SPADNS Method: Colorimetric Equipment: Spectrophotometer — For use at a wavelength of 570 nm providing a light path of atleast 1 cm, or Filter Photometer — Providing a 1 cm light path and equipped with a greenish yellow filter having a maximum transmittance at 550 nm to 580 nm with labware and reagents as per 3025 (Part 60/Sec 1). ii) Method using flow injection analysis (FIA) and spectrometric detection after off-line Distillation as per IS 3025 (Part 60/Sec 2): Flow injection analysis system, Low pulsation pump, Sample introduction system, Reaction manifold, consisting of fluorocarbon polymer tubes, such as polytetrafluoroethylene (PTFE) with the internal diameter of 0.5 mm to 0.8 mm, plastics joints of chemically inert and small dead volume and a thermostat which is capable of heating at 70 °C, Detection system. using a spectrometric detector with flow cell, which is capable of measuring at a wavelength of 620 nm ± 5 nm, Recording system, which is capable of recording signals from the detector, Distillation apparatus, labware and reagents as per IS 3025 (Part 60/Sec 2) iii) Method using Continuous Flow Analysis (CFA) with Automated In-line Distillation as per IS 3025 (Part 60/Sec 3) Continuous flow analysis system with following components: Low pulsation-pump, Sample introduction system, Distiller, composed of a distillation unit and a heater which is capable of heating at 145 °C, Reaction manifold, composed of chemically inert tubes with the internal diameter of about 0.5 mm to 2 mm, and glass or plastic parts with a small dead volume, Detection system using a spectrophotometric detector with flow cell which is capable of measuring at a wavelength of 620 nm ± 5 nm, Recording system, which is capable of recording signals from the detector, labware and reagents as per IS 3025 (Part 60/Sec 3)
10	Determination of Zinc as per IS 3025 (Part 49)	Zincon method: Spectrophotometer - for use at 620 nm with 1 cm cells with labware and reagents as per IS 3025 (Part 49) Atomic Absorption Method (Direct) and Atomic Absorption method (Chelation-Extraction): Atomic Absorption Spectrophotometer with Air-Acetylene Flame, Multi-element hollow-cathode lamps or electrode less discharge lamps for use at 213.8 nm, labware and reagents as per IS 3025 (Part 49)

11	Determination of Silver	
	As per IS 3025 (Part 79)	a) Extraction/air-acetylene flame method Atomic Absorption Spectrometer and Associated Equipment, , labware and reagents as per IS 3025 (Part 79) c) Electrothermal atomic absorption spectrometric method Atomic Absorption Spectrophotometer with background correction capability, Graphite Furnace, Readout, Membrane Filter Apparatus, all glass filtering device and membrane filters having a pore diameter of 0.45 µm or smaller, Cooling Water Supply, tap water at 1 l/min to 4 l/min to cool and use a recirculating cooling device, Sample Dispensers, pipets of microliter capacity (5 µl to 100 µl) or an automatic sampling device which is designed for the particular instrument, Source Lamps, a hollow - cathode lamp or an electrode discharge lamp, Vent, labware and reagents as per IS 3025 (Part 79)
12	Determination of Aluminium as per IS 3025 (Part 55)	a) Eriochrome cyanine R method Spectrophotometer — for use at 5.35 nm with 1 cm cells, pH meter, labware and reagents as per IS 3025 (Part 55) b) Atomic Absorption Method Atomic Absorption Spectrophotometer — with nitrous oxide-acetylene flame, hollow-cathode lamp or electrodeless discharge lamp for use at 309.3 nm, labware and reagents as per IS 3025 (Part 55)
13	Determination of Chloride as per IS 3025 (Part 32)	a) Argentometric Method Erlenmeyer Flask 250 ml, Burette 50 ml, labware and reagents as per IS 3025 (Part 32) b) Mercuric Nitrate Method Erlenmeyer Flask 250 ml, Microburette 5 ml with 0.01 ml graduation intervals, labware and reagents as per IS 3025 (Part 32) c) Potentiometric Method Glass and silver-silver chloride electrodes, Electronic voltmeter, Mechanical stirrer, labware and reagents as per IS 3025 (Part 32) d) Automated Ferricyanide Method Automated analytical equipment as per Fig. 1 of IS 3025 (Part 32), Filters – 480 nm, labware and reagents as per IS 3025 (Part 32)

14	Determination of Selenium as per IS 3025 (Part 56)	a) Atomic absorption spectrometric method (Hydride technique). Atomic Absorption Spectrometer — Fitted with a hydride system and a suitable radiation source for the determination of selenium, for example, electrodeless discharge lamp or a hollow cathode lamp and preferably, a background correction facility, gas supply with Argon or Nitrogen, labware and reagents as per IS 3025 (Part 56)
15	Determination of Sulphate	
	As per IS 3025 (Part 24/Sec 1)	a) Gravimetric method Steam Bath, Drying Oven, equipped with thermostatic control, Muffle Furnace, with heat indicator, Desiccator, Analytical Balance, with least count of 0.1 mg, Filter Paper, acid washed, ash-less hard finish filter paper sufficiently retentive for fine precipitates (preferably Whatman No. 42/equivalent), Crucible, porous bottom silica or porcelain crucible with a maximum pore size of 5 microns, Ion-Exchange Column, Labware and reagents as per IS 3025 (Part 24/Sec 1) b) Turbidity method Magnetic Stirrer, Photometer (preferably a Nephelometer or if not available, a spectrophotometer, for use at 420 nm with light path of up to 5 cm), Stopwatch, to be used if magnetic stirrer is not equipped with an accurate timer, Measuring Spoon, capacity from 0.2 ml to 0.3 ml, Labware and reagents as per IS 3025 (Part 24/Sec 1)
	As per IS 3025 (Part 24/Sec 2)	Continuous-flow analysis (CFA) system consisting of: Sampler or other device, for reproducible sample introduction, Reagent containers, Low pulse pump, with chemical resistant pump tubes, Inlet connector, made of glass, or chemical resistant material, with reproducible air-, sample- and reagent segmentation, Photometer, with flow cell, optical path length, e.g. 10 mm, wavelength range 450 nm to 470 nm, Data acquisition and display unit, such as a PC, recorder, printer or plotter, Graduated flasks, nominal capacity 100 ml and 1 000 ml, Graduated pipettes, nominal capacity 1 ml, 2 ml, 3 ml, 4 ml, 5 ml, 6 ml, 7 ml, 8 ml, 9 ml, 10 ml and 50 ml, Cation exchange column, Labware and reagents as per IS 3025 (Part 24/Sec 2)
16	Determination of Alkalinity as per IS 3025 (Part 23)	pH Meter Burette, 50 ml capacity. Pipets, 10 ml capacity. Beaker, 100 ml.

		Volumetric flask, 100, 200 ml. Magnetic Stirrer Assembly Labware and reagents as per IS 3025 (Part 23)
17	Determination of Calcium as per IS 3025 (Part 40)	a) EDTA titrimetric method Hot plate, titration assembly, labware and reagents as per IS 3025 (Part 40) b) Atomic absorption spectrometric method Atomic absorption spectrometer set up and equipped with an appropriate burner for air/ acetylene flame or nitrous oxide/acetylene flame and a hollow cathode lamp for calcium with a wavelength of 422·7 nm. labware and reagents as per IS 3025 (Part 40) c) Permanganate titration method Beakers with Glass Rod - 400 ml capacity and cover glass Filtration Set Up - A coarse filter paper or a small filter paper supported in a Gooch crucible with suction.
18	Determination of Magnesium as per IS 3025 (Part 46)	a) Volumetric method using EDTA Analytical grade Volumetric Glassware Labware and reagents as per IS 3025 (Part 46) b) Atomic absorption spectrophotometric method Atomic absorption spectrophotometer set up and equipped with an appropriate burner for air-acetylene flame or nitrous oxide-acetylene flame and a hollow cathode lamp for magnesium with wavelength of 285.2 nm, Labware and reagents as per IS 3025 (Part 46)
19	Determination of Sodium as per IS 3025 (Part 45)	a) Flame emission photometric method using either a flame photometer or an atomic absorption spectrophotometer in the flame emission mode Flame Photometer either direct-reading or internal standard type or an atomic absorption spectrophotometer in the flame emission mode, Labware and reagents as per IS 3025 (Part 45) b) Atomic absorption spectrometric method using an atomic absorption spectrophoto-meter in flame absorption mode Atomic absorption spectrophotometer in the absorption mode, set up and operated according to the manufacturer's instructions, equipped with an appropriate burner for air-acetylene flame and hollow cathode lamps for sodium and potassium determinations, Labware and reagents as per IS 3025 (Part 45)

		c) Gravimetric method for determination of sodium Beakers - 20-ml borosilicate. Fritted Glass Crucible - 30-ml borosilicate of medium porosilicate of medium porosity: or porous porcelain crucibles. Vacuum pump or aspirator, with manifold and individual petcocks, Labware and reagents as per IS 3025 (Part 45)
20	Determination of Residual Free Chlorine as per IS 3025 (Part 26)	a) Titrimetric Method using DPD Ordinary laboratory apparatus Microburette, measuring up to 5 ml and graduated in divisions of 0.02 ml. anhydrous disodium hydrogen phosphate, Potassium dihydrogen phosphate (KH_2PO_4) and other reagents as per IS 3025 (Part 26) b) Colorimetric Method using DPD for routine control Usual laboratory apparatus and, in particular, photometric or colorimetric equipment respectively, comprising one of the following: - Comparator, equipped with a scale of permanent glass or plastics colour standards specially set up for the DPD technique and suitable for concentrations from 0.000 4 mmol/l to 0.07 mmol/l (that is 0.03 mg/l to 5 mg/l) of chlorine. - Spectrometer, a photometer, colorimeter or spectrophotometer, with a selector for wavelength variation, suitable for use at 510 ± 20 nm or 550 ± 20 nm and equipped with rectangular or cylindrical cells with an optical path length of 10 mm or greater. Chlorine-demand free glassware, obtained by filling with sodium hypochlorite solution then, after 1 h, rinsing copiously with water Other Labware and reagents as per IS 3025 (Part 26)
21	Determination of Phenolic Compounds as per IS 3025 (Part 43/Sec 1)	a) 4-Aminoantipyrine method with chloroform extraction. Spectrophotometer, for use at 460 nm and equipped with 1 to 10 cm cells. Filter Funnels, Buchner type with fritted disc. Filter Paper, alternative to Buchner type funnel, use Whatman No. 40 filter paper and anhydrous sodium sulphate for filtration of chloroform phase. H Meter Separating Funnel, 1 000 ml capacity with ground glass stoppers and TFE stop cock Labware and reagents as per IS 3025 (Part 43/Sec 1)
22	Determination of Mineral Oil as per IS 3025 (Part 39)	a) Partition infra-red method Separating Funnel — 2 litre capacity with Teflon or equivalent stopcock.

		Infra-Red Spectrophotometer Cells — Infra-red, silica/quartz (1 or 5 cm path length; for lower range, 5 cm path length will be appropriate). Filter Paper — Whatman No. 40 or equivalent,11 cm diameter. Volumetric Flask — 100 ml. Glass Funnel Centrifuge — Capable of spinning at least four 100 ml glass centrifuge tubes at 2 400 rpm or more. Centrifuge Tube — 100 ml glass (optional). Labware and Reagents as per IS 3025 (Part 39)
23	Determination of Anionic surface active agents (as MBAS) as per IS 3025 (Part 68)	Ordinary laboratory equipment and the following: pH-meter with suitable electrodes made from glass. UV-VIS Spectrometer capable of measurement at 650 nm, equipped with quartz cuvettes of optional path lengths 10 mm and 50 mm. Gas-stripping Apparatus Labware and Reagents as per IS 3025 (Part 68)
24	Determination of Sulphide (as H_2S) as per IS 3025 (Part 29)	a) Titrimetric iodine method or methylene blue method Matched Test Tubes, with an outer diameter (OD) of approximately 15 mm and 125 mm long Droppers, delivering the methylene blue solution (20 drops/ml). Spectrophotometer, suitable for use at a wavelength of 664 mm with cells providing the light paths of 1 cm and 1 mm or other path lengths or filter photometer, having a filter that provides a maximum transmittance near 660 nm. Methylene blue solution I and II Labware and Reagents as per IS 3025 (Part 29) b) Iodometric method Glass Bottles with Stoppers Sodium Hydroxide Solution, 6N Aluminium Chloride Solution Hydrochloric Acid (HCl), 6 N Standard Iodine Solution, 0.025 N Standard Sodium Thio-Sulphate Solution, 0.025 N Starch Solution Labware and Reagents as per IS 3025 (Part 29)
25	Determination of Antimony	
	As per Annex H of IS 13428	Suitable Spectrophotometer Erlenmeyer Flask Hydrochloric Acid Solution — 6 N Dilute Phosphoric Acid — 3 N Rhodamine B Solution — 0.02 percent (in distilled water) Antimony Standard Solutions Labware and reagents as per Annex H of IS 13428
	As per IS 15303	Atomic absorption spectrometer Source Lamps Graphite Furnace Readout Sample Dispensers Vent

		Cooling Water Supply Membrane Filter Apparatus Metal-Free Water Labware and reagents as per IS 15303
26	Determination of Borates as per Annex J of IS 13428	Ordinary laboratory apparatus made of polypropylene, polyethylene or polytetrafluoroethylene, where applicable. Spectrometer, for use in the wavelength range of 410 nm to 420 nm, with cells of an optical path length between 10 mm and 50 mm. Labware and reagents as per Annex J of IS 13428
27	Determination of Bromates as per IS 3025 (Part 67)	Ion chromatographic system, complying with the quality requirements of clause 8 of IS 3025 (Part 67), i.e. resolution. In general, it shall consist of the following components a) eluent reservoirs, and a degassing unit for two eluents; b) pump, suitable for step gradient technique; c) sample delivery device (e.g. sample pump) including a sample injection system incorporating a sample loop of appropriate volume (e.g. 0,05 ml to 2 ml) or autosampler device; d) column-switching valves (e.g. 6-port-valve) including a device for timing and controlling valves and pump; e) concentrator column (may be required for low concentrations); f) separator column with the specified separating performance (see clause 8); g) conductivity detector with an anion suppressor device assembly; h) UV detector (e.g. spectrophotometer: 190 nm to 400 nm); i) recording device (e.g. recorder, integrator with printer, PC with software for data acquisition and evaluation). j) Labware and reagents as per IS 3025 (Part 67) k) Cartridges. -cation exchanger in the Ag-form (cartridge); -cation exchanger in the Ba-form (cartridge); -cation exchanger in the H-form (cartridge); -optional: metal clean-up column for on-line use; -cartridges with non-polar phases to be used for sample preparation (e.g. polyvinylpyrrolidone).

TABLE 3 - PARAMETERS CONCERNING TOXIC SUBSTANCE

Sl. No.	**Tests Used In WithClause Reference**	**Test Equipment/Chemical**
1	Determination of Cadmium, Arsenic, Lead, Chromium, and Nickel, by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) as per IS 3025 (Part 2)	Inductively coupled plasma optical emission spectrometer, Radiofrequency generator, Mass-flow controller, Nebulizer (or ultrasonic nebulizer if required), Argon gas supply, containers of appropriate material (perfluoroalkoxy (PFA), hexafluoroethene propene (FEP) or quartz container is recommended), labware and reagents as per IS 3025 (Part 2)

2	Determination of Mercury, Cadmium, Arsenic, Lead, Chromium, Nickel and Uranium by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) as per IS 3025 (Part 65)	Mass spectrometer, Nebulizer with variable speed peristaltic pump, Argon gas supply, containers of appropriate material (perfluoroalkoxy (PFA), hexafluoroethene propene (FEP) or quartz container is recommended), labware and reagents as per IS 3025 (Part 65)
3	Mercury (as Hg) as per IS 3025 (Part 48	
	Cold Vapour Atomic Absorption Spectrometry	Atomic Absorption Spectrometer and Associated Equipment (Cold Vapour Technique) Mercury Vapour Generation Assembly Mercury Hollow Cathode Lamp Recorder/Printer/Display Meter BOD bottle, 300 ml Water bath Equipment Assembly Labware and Reagents as per IS 3025 (Part 48)
4	Cadmium as per IS 3025 (Part 41)	a) Direct air-acetylene flame method Atomic absorption spectrometer and associated equipment. Cadmium hollow-cathode lamp or multi-element hollow-cathode lamp for use at 228.8 nm. Burner head as recommended by the manufacturer. Labware and Reagents as per IS 3025 (Part 41) b) Extraction/air-acetylene flame method Atomic absorption spectrometer and associated equipment. Burner head as recommended by the manufacturer. Labware and Reagents as per IS 3025 (Part 41) c) Differential pulse anodic stripping voltammetry Polarographic instrumentation capable of performing differential pulse work Hanging Mercury Drop Electrode PIatinum Counter Electrode Saturated Calomel Reference Electrode (SCE) Magnetic Stirrer Control Unit, Stirring bar Labware and Reagents as per IS 3025 (Part 41)
5	Arsenic as per IS 3025 (Part 37)	a) Atomic absorption method Atomic absorption spectrometer equipped with gas flow meter for Argon or Nitrogen and Hydrogen and with arsenic electrodeless discharge lamp Atomizer Reaction Cell for producing Arsenic Hydride Eye Dropper or Syringe Refrigerator

		Labware and Reagents as per IS 3025 (Part 37) b) Silver diethyl dithiocarbamate method Arsine Generator and Absorption Tube Photometric Equipment that consists of: (a) Spectrophotometer, for use at 520 nm with 1 cm cells, (b) Filter photometer with a green filter with a maximum transmittance in the range of 500-540 nm, and (c) Cells for spectrophotometer or filter photometer having a path length of 1 cm. Labware and Reagents as per IS 3025 (Part 37)
6	Cyanide	
	As per IS 3025 (Part 27/Sec 1)	<u>Total Cyanide After Distillation (Preliminary step)</u> Boiling Flask — 1 litre, with inlet tube and provision for water-cooled condensers. Heating Mantle Gas Absorber — With gas dispersion tube equipped with medium-porosity fritted outlet. Ground Glass ST Joints — TFE sleeved or with an appropriate lubricant for the boiling flask and condenser. Neoprene stopper and plastic threaded joints may also be used.
	As per IS 3025 (Part 27/Sec 2)	Usual laboratory apparatus and in particular the following. Flow injection analysis system for gas diffusion method. Autosampler, or other device allowing a reproducible introduction of the sample Reagent reservoirs. Low pulsation pump, with specific chemically inert pump tubes, for flow rates as shown in Figure A.1 as an example. UV-lamp, with: — an emission maximum >310 nm to 400 nm; — a power of 8 W to12 W; — a digestion coil of FEP or PTFE, internal diameter 0,8 mm, length 5 000 mm, tube wall thickness at maximum 1 mm (e.g. 351 nm UV lamp with PTFE coil). Thermoreactor 1: digestion coil of FEP with 0,8 mm × 3 600 mm, tube wall thickness at maximum 1.5 mm with a temperature of 85 °C for total cyanide and 40 °C for free cyanide Gas diffusion cell, with hydrophobic semipermeable membrane made from polypropylene or PTFE, for example, typical thickness 90 µm to 200 µm, pore size 0,1 µm to 1 µm. Manifold with highly reproducible dosing of sample and reagents, with appropriate transport systems and connection assemblies of chemically inert polymer. Photometric detector, with flow cell, wavelength 600 nm ± 10 nm. Recording unit (e.g. strip chart recorder, integrator, printer and plotter or a computer data system). Thermoreactor 2, 65 °C, length 3 000 mm, internal diameter 0,8 mm (see Figure A.1). Lead acetate test paper, commercially available.

		Membrane filter assembly, with membrane filters having a pore size of 0,45 µm. pH measuring device. Labware and Reagents as per IS 3025 (Part 37/Sec 2)
	As per IS 3025 (Part 27/Sec 3)	Usual laboratory apparatus and in particular the following: Continuous flow analysis system for distillation method. Autosampler, or other device capable of introducing sample reproducibility. Reagent reservoirs. Low pulsation pump, having specific chemically inert pump tubes, UV lamp, with: — UV-B lamp (312 nm to 400 nm); — a power of 8 W to 12 W; — a digestion coil of borosilicate glass, quartz glass or polytetrafluoroethylene (PTFE). In-line distillation device, adjustable to a temperature of 125 °C ± 1 °C with a distillation coil of glass or polymer material, length of coil e.g. 80 cm, internal diameter e.g. 1,5 mm. Manifold, capable of highly reproducible dosing of gas bubbles, sample and reagents, and having appropriate transport systems and connection assemblies of chemically inert glass, polymer or metal. Heating bath, for colorimetric reaction, adjustable to a temperature of 37 °C ± 1 °C with a coil volume to allow a sample retention period of approximately 4 min. Photometric detector, with a flow cell, and having a wavelength range 600 nm ± 10 nm. Recording unit (e.g. strip chart recorder, integrator, printer and plotter or a computer data system) OR Continuous flow analysis system for gas diffusion method. Autosampler, or other device capable of introducing sample reproducibly Reagent reservoirs. Low pulsation pump, having specific chemically inert pump tubes. UV lamp Gas diffusion cell, having a hydrophobic semipermeable membrane made from polypropylene or PTFE, Heating bath for gas diffusion temperature stabilization, adjustable to a temperature between 30 °C to 40 °C (with a tolerance of ± 1 °C) with a coil capacity of typically 2 ml Manifold, capable of highly reproducible dosing of gas bubbles, sample and reagents, and having appropriate transport systems and connection assemblies made of chemically inert glass, polymer or metal. Heating bath for colorimetric reaction adjustable to a temperature of 37 °C ± 1 °C with a spiral dimension to allow a sample retention period of approximately 4 min. Photometric detector, with flow cell, and having a wavelength range of 600 nm ± 10 nm. Use an appropriate optical pathlength to achieve a minimum absorbance (absolute value) of 0,01 per 1 cm pathlength for a 10 µg/l cyanide solution.

		Recording unit (e.g. strip chart recorder, integrator, printer and plotter or a computer data system). Lead acetate test paper, commercially available. Membrane filter assembly, with membrane filters having a pore size of 0.45 µm. pH measuring device.
7	Lead as per IS 3025 (Part 47)	Differential Pulse Anodic Stripping Voltammetry (DPAV); Polarograph capable of performing differential pulse work •Hanging mercury drop electrode •Platinum counter electrode •Saturated calomel reference electrode •Magnetic stirrer control unit with stirring bar •Scrubber assembly for nitrogen purification •Nitrogen gas (cylinder) •0.45µm membrane filter
		Dithizone method Spectrophotometer for use at 510 nm with 1-cm cell pH meter TEF beakers, 100 ml Separating funnels, 250 ml, 500 ml
8	Chromium as per Annex K of IS 13428	Atomic Absorption Spectrophotometer of wavelength 328.1, Oxidizing air-acetylene flame, and optimum range 0.1 to 20 (as per table 8 of Annex K of IS 13428), labware and reagents as per Annex K of IS 13428
9	Nickel as per Annex L of IS 13428	Atomic absorption spectrometer fitted with hollow cathode lamps for appropriate metals or electrodeless discharge lamps, and with a suitable device for allowing for the correction of the nonspecific absorbance and with a nebulizer-burner with an acetylene-air flame. Labware and reagents as per Annex L of IS 13428
10	Polychlorinated biphenyl (PCB) as per Annex M of IS 13428	Glass Chromatographic Column — 300 mm long, 8 mm 1D with a ground-glass socket at the upper end and a stopcock at the lower end. Gas Chromatograph Equipped with electron capture detector and coupled with printer-plotter-cum-integrator as per M-2.2 Electron Capture Detector Kuderna-Danish Type, Evaporator — with interchangeable 10 ml graduated collection tubes Snyder Columns — two-bubble micro-columns, with ground glass cones to fit the Kuderna-Danish type, 10 ml collection tubes. Syringe — 5µl capacity Labware and reagents as per Annex M of IS 13428

11	Polynuclear aromatic hydrocarbons as per APHA 6440	High Performance Liquid Chromatograph (HPLC) complete with gradient pumping system, reverse phase column and detectors (UV and fluorescence) Gas Chromatograph (GC) complete with column and flame ionization detector. Separating funnel (2 l) Evaporative flask Three Ball Synder column Kuderna- Danish Apparatus Water bath (60-65˚C) Labware and Reagents as per APHA 6440
12	Uranium as per IS 14194 (Part 3/Sec 1)	LED Uranium Fluorimeter Micro-Pipettes — (5 ml, 0.5 ml, 100 µl, 50 µl) with disposable tips. Analytical Weighting Balance pH Meter TDS Meter Suprasil Quartz Cuvette with Teflon Cap Lint Free Wipers Uranium Standard Solution (100 ppm or Higher) Sodium Pyrophosphate — purity more than 99 percent. Phosphoric Acid — purity more than 90 percent Labware and Reagents as per IS 14194 (Part 3/Sec 1)

Note 1: Approved and validated international test methods from ISO/APHA/ASTM/AOAC/EPA/EN may also be followed and test equipment/chemicals as per those standard referred in such cases

Note 2: The list does not cover the requirements of Pesticide Residues and Radio Active Residues since these tests are normally subcontracted.

TABLE 4 – MICROBIOLOGICAL PARAMETERS

Sl. No.	**Tests Used In WithClause Reference**	**Test Equipment/Chemical**
1	General microbiological lab equipment	Hot air oven (capable of 160 to 180 ºC). Autoclave (capable of 15 psi/ 121 ºC) of suitable size as per need. Weighing Balance with least count 0.01 g (least count 0.001 g, if Crystal violet neutral red bile lactose(VRBL) agar is being prepared in house). *p*H meter with least count 0.1 *p*H unit. Laminar air flow chamber OR Class II Biosafety Cabinets shall be used for product testing and reference culture in microbiology laboratories. Hot plate for media preparation. Membrane filtration assembly (including sterilized membrane filters of 47 mm to 50 mm diameter with 0.45 µm pore size, vacuum pump (for applying vacuum of about 70 kPa) and forceps with rounded tips). Inoculation loop/needle. Bunsen burner with LPG cylinder. Thermostatically controlled water bath. Air conditioner (recommended) Refrigerator Colony counting equipment (recommended) General glass wares including, petri dishes (made of glass or plastic), volumetric pipettes (of capacity 1 ml and 10 ml), flasks, test tubes, culture bottles, funnels,

		glass rod, measuring cylinders. Thermometer with least count, at least four times smaller than the range of required maximum permissible tolerance shall be used) Filter paper, Cotton Ready-to-use microbiological culture plates may also be used against the medias, as mentioned in the table below
2	*Escherichia coli* — (or thermotolerant bacteria) Or Coliform as per IS 15185	• General microbiological lab equipments (as listed above) • Incubator capable of maintaining (36+2)^{0}C • Equipment, for membrane filtration • Membrane filters • Disinfected forceps, for handling of membrane filters. • @Incubator capable of maintaining 44°C Microscope and Glass slides (*for Gramstaining)* • Distilled water • **Chromogenic Coliform Agar** (Enzymatic digestof casein 1.0g, Yeast Extract 2.0g, Sodium chloride 5.0g, • Sodium dihydrogen phosphate x 2H2O 2.2g, • Disodium Hydrogen Phosphate 2.7g, • Sodium pyruvate 1.0g, • Sorbitol 1.0g, • Tryptophane 1.0g, 6-chloro 3 indoxyl Beta D Galactopyranoside 0.2g, 5- Bromo 4-Chloro 3Indoxyl Beta D Glucuronic Acid 0.1g, • Iso propyl Beta D thiogalactopyranoside (IPTG) 0.1g, • Bacteriological Agar 9-18g • Water 1000ml • pH 6.8±0.2 at 25°C. • Oxidase reagent: • Labware and reagents as per IS 15185
3	Coliform as per IS 5401 (Part 1)	General microbiological lab equipments (as listed above) Incubator capable of operating at 37 ºC ± 1 ºC • Petri dishes, made of glass or plastic, of diameter 90 mm to 100 mm • Total-delivery pipettes, having nominal capacities of 1ml • Water bath, or similar apparatus, capable of operating at 44 to 47°C • Colony-counting equipment, consisting of an illuminated base and a mechanical or electronic digital counter • Test tubes of dimensions approximately 16 mm x 160 mm • Durham tubes of dimensions appropriate for use with the test tubes • Bottles or flasks, for boiling and storage of culture media Labware and reagents as per IS 5401 (Part 1)

4	Sulphite reducing anaerobes as per Annex C of IS 13428	General microbiological lab equipments (as listed above) Sample quantity : 50 ml • Screw cap bottles or vials and stoppers of boron silicate glass of capacities 100 ml • Water bath capable at 75 ± 5 °C. Iron wire • Incubator (37 ºC ± 1 ºC) • Appropriate method to hermetically seal the vial or anaerobic systems • Anaerobic jar assembly (recommended) • Culture media and reagents as per Annex C of IS 13428 clostridial medium (DRCM) – Double strength and Single Strength (if necessary) (Peptone tryptic digest of meat , Meat extract, Yeast extract, Starch, Hydrated sodium acetate, Glucose, L- cysteine-hydrochloride, Sodium hydroxide) Sodium sulphite Iron (III) citrate Iron (III) citrate
5	Pseudomonas Aeruginosa As per Annex D of IS 13428	General microbiological lab equipments (as listed above) Screw capped bottles • Incubator (37 ± 1° C) • @Incubator, capable of being maintained at 42 ± 0.5° C @Incubator 4° C • UV cabinet fitted with UV lamp emitting light of wavelength 360 ± 20 nm • Cellulose acetate or nitrate membrane of pore size 0.22 µm (for alternate sterilization of ethanol) @ Incubator, capable of being maintained at 42 ± 0.5° C
6	Aerobic Microbial Count as per IS 5402 (Part 1)	• General microbiological lab equipments (as listed above) • Incubators 21 ºC ± 1 ºC and 37 ºC$\pm 1^0$C • Colony counting equipment • Distilled water • Plate count agar (PCA) – (Enzymatic digestion of casein, Yeast extract, Glucose anhydrous, Agar) • Overlay medium (if necessary) – Agar
7	Yeast and Mould as per IS 16069 (Part 1)	• General microbiological lab equipments (as listed above) • Incubator (25 ± 1 ºC) • Distilled water • Yeast extract-dextrose- chloramphenicol-agar medium – (Yeast extract, Dextrose, Chloramphenicol or Oxytetracycline hydrochloride, Agar)

Note 1: Test equipment/chemicals for Faecal Streptococci and Staphylococcus aureus, Salmonella and Shigella Vibrio cholera and V. parahaemolyticus are not indicated here since these tests are normally subcontracted.

Note 2: Test equipment/chemicals for testing of containers are not indicated here since these tests are normally subcontracted or done by the supplier of containers

ANNEX C

SCHEME OF INSPECTION AND TESTING

1.0 LABORATORY -A laboratory shall be maintained which shall be suitably equipped and staffed with competent testing person(s) to carry out the different tests in accordance with the methods given in the Indian standards. Testing person(s) shall be science/engineering graduate from disciplines such as chemistry/chemical engineering/ microbiology/ biotechnology/ biochemistry/ food technology/ botany and other biological/ life sciences. Engineering graduates from disciplines such as chemical engineering may also be engaged as testing persons.
1.1. The manufacturer shall prepare and implement a calibration plan for the test equipment.

2. TEST RECORDS –The manufacturer shall maintain test records for the tests carried out to establish conformity.

3.0 LABELLING AND MARKING - The Standard Mark, as given in the Schedule of the Licence shall be clearly marked legibly and indelibly on the label of the bottle/container or on the pouch as the case may be, provided always that the material on which this Mark is applied conforms to every requirement of the specification. The dimension of standard mark shall be in accordance with specified design.

3.1 PACKING – The Packaged Drinking Water shall be packed as per clause 6 of IS 14543:2024. The pouches and bottles/containers may be supplied in secondary packaging as agreed to between the purchaser and the supplier.

3.2 MARKING – In to the Standard Mark as per clause 7. 3 of IS 14543:2024 the following information shall be given legibly & indelibly on each bottle/container or its label or directly printed on the pouch/bottle/container.

a) Name of the product in capital letters (that is, packaged drinking water);
b) Name and address of the processor;
c) Brand name, if any;
d) Batch or code number;
e) Date of manufacture or packaging and
f) 'Expiry/use by;
g) Treatment of disinfection, if any;
h) Best before date (optional);
i) Net quantity;
j) Direction for storage;
k) Keep away from direct sunlight; and
l) Any other information required under the *Legal Metrology* (*Packaged Commodities*) *Rules, 2011 and the Food Safety and Standards* (*Labelling and Display*) *Regulations*, 2020.

3.2.1 Minimum height of the BIS Standard Mark on different pack sizes of Packaged Drinking Water shall be as under:

S. No.	Size of Container	Min height of BIS Standard Mark*
1	Pouch/Cups/bottle (250 ml capacity & below)	5mm
2	Bottles upto500ml capacity & below (but greater than 250 ml capacity)	7.5mm
3	Bottles more than 500ml capacity	10mm
4	All re-useable Jars	15mm
(* other dimensions of the BIS Standard Mark shall be in appropriate proportions as per BIS guidelines).		

3.3 Each secondary packing of pouches/bottles/containers shall be marked with the following, except where such secondary packing is transparent and the markings on the pouches/bottles/containers are legible through the secondary packing:

i. Indication of the source of manufacture i.e. manufacturer's name and address;
ii. Number of pouches/bottles/containers
iii. Brand name, if any
iv. Nominal capacity;
v. Batch No. or Code No.

Note: In case a manufacturer with same brand name is holding BIS licences at multiple premises (units) under same ownership and opts for marking multiple licence numbers on the unified label, the same may be considered, provided the identification and traceability of the product, is established as envisaged.

3.4 LABELLING PROHIBITIONS -The label on the bottles/containers/pouches and/or the secondary packaging shall not contain claims which are prohibited as per clause 7.2 of IS14543:2024.

3.5 Shelf life: Declared shelf life for Packaged Drinking Water in all type of packing materials shall not be less than 30 days. (also see Table 1)

3.6 Brand names: The labels conforming to the marking details as mentioned in clause 7 of IS 14543 along with the brand names are to be submitted to by licensees to BIS for information only, which will only be noted by BIS for records. The compliance of such labels to the requirement of clause 7 shall be ensured by licensees. However, in case non-compliance to Clause 7 is observed by BIS and communicated in writing to licensee, licensee shall make necessary rectification and resubmit the label for confirmation to concerned BIS Branch Office within 15 days. Decision of BIS regarding whether labeling is complying or not with clause 7 of IS 14543 shall be final.

4.0 LEVELS OF CONTROL –For packaged drinking water, the tests as indicated in Table 1 and at the levels of control specified therein, shall be carried out on the whole production of the factory covered by this Scheme and appropriate records maintained in accordance with clause 2 of this Scheme. Entire production which conforms to the Indian Standard and covered by the licence shall be marked with Certification Mark of the Bureau.

NOTE: The provisions of BIS Central Marks Department-1's circular no. CMD-I/2:4:1 dated 19 January 2024 as regards levels of control and subcontracting of testing shall not apply in case of Packaged Drinking Water. https://www.services.bis.gov.in/tmp/Circular_UZnP_2024-01-19.pdf

5.0 CONTROL UNIT - For the purpose of this Scheme, the quantity of packaged drinking water treated/processed from each processing line and filled/packed in one day shall constitute a Control Unit.

5.1 On the basis of tests and analysis results, the decision regarding conformity or otherwise of a Control Unit to the given requirements shall be made.

5.2 In respect of all other clauses of the Standard (other than those mentioned under Levels of Control– Table 1 of this Scheme) the factory shall maintain appropriate controls and checks to ensure that their product conforms to the requirements of the standard.

5.3 Records of the batch wise consumption of the added minerals, if applicable, are to be maintained along with the invoices and test certificates for the same.

6.0 Microbiological Requirements - If any failure is noticed in any of the microbiological requirements, control units available in the stock shall be rechecked and released into the market only after conformity is ensured.

6.1 The licensee shall take immediate corrective actions, which would involve complete investigation of the reasons for contamination and non-conformity. The manufacturer should re-start marking and dispatch only after the completion of satisfactory corrective actions and availability of satisfactory results of all microbiological tests as applicable for each control unit, for next 2 consecutive control units.

7.0 SOURCE WATER - The source water used in production of Packaged Drinking Water shall be initially tested for Organoleptic and physical parameters (Table 1), Chemical requirements (Table 2), and all microbiological requirements possible to be tested in house. Subsequently, its quality may be regularly assessed at least once in three months through in-house testing for Colour, Odour, Taste, Turbidity, pH, Total Dissolved Solids and Microbiological requirements. In addition, any other requirements as considered necessary for process control, are to be tested

where the incidence of their presence in higher levels has been detected during the previous tests.

7.1 Whenever, the quality of processed water is found to be not meeting the requirements of IS 14543 for the tested parameters, the source water shall be checked again for such parameters in which failure is observed for deciding upon the necessary controls to be exercised for conformance of quality of processed water to IS 14543.

7.2 In case non-conformity is observed for radioactive residues, the source of raw water shall be abandoned and water shall be recalled immediately.

7.3 As and when there is change in source water or addition of new source of raw water, it shall be intimated to BIS. The raw water collected from the new source shall be tested in accordance with Clause 7 as above and the processed water produced from such source water shall be tested for conformity to IS 14543 from BIS recognized outside lab. The reports of source water and the product water produced from the new source shall be submitted to BIS for approval before commissioning for regular production and marking.

7.4 The source water shall be treated as per clause 5.1 of IS 14543:2024. In case the licensee carries out remineralization as part of its treatment process, the ingredients used shall conform to food grade/pharma grade quality. The test certificate of these ingredients shall be submitted to BIS.

7.5 The means adopted for disinfection of the product water shall be declared and shall be done in accordance with clause 5.1.1 of IS 14543:2024.

8.0 Plastic Jars/Bottles/Containers - The plastic containers of each capacity used for packing the material shall conform to IS 15410. The conformity assessment shall be carried in accordance with the levels of controls as given under Table 2.

8.1 In addition, the top lid for glasses/cups shall be of suitable peelable structure in accordance with Clause 4.2.1 of IS 15410:2003.

8.2 Pouches–The polyethylene film and pouches shall conform to IS 15609. The conformity assessment shall be carried in accordance with the levels of controls as given under Table 3.

8.3 Glass Bottles - IS 11984 has been specified as a reference Indian Standard for glass bottles. However, if any manufacturer intends to use glass bottles for packaging, it shall be included in the licence. The separate processing line for filling the glass bottles may be verified by BIS during the next inspection and necessary steps in the process for ensuring sterility of bottles may be adopted like steam sterilizing, hot water rinsing, UV sterilization or combination thereof. In case of lug caps containing plastic lining, food grade certificate or OSL test report for migration testing may be accepted.

8.4 Paper based multilayer laminated/extruded composite cartons and aluminum cans - Paper based multilayer laminated/extruded composite cartons shall conform to IS 17753. The conformity assessment may be carried in accordance with the levels of controls as given under Table 4. **(**Cases where the applicant intends to use *Paper based multilayer laminated/extruded composite cartons for packaging as per IS 17753*, the case shall be sent by BO to CMD-2 with complete information and recommendation. CMD-2 shall review all such cases and decide on approval and communicate to BO till further guidelines in this matter are issued).

8.5 Aluminum cans shall conform to IS 18285. The conformity assessment may be carried in accordance with the levels of controls as given under Table 5.

9. REUSED CONTAINERS – Licensee shall ensure use of only such jars for packing the product water whose transparency continues to meet the requirements as per IS 15410 even after its repeated use. Jars which get soiled, de-shaped and/or mutilated during the course of use and refilling shall not be used. Water to be used for the purpose of cleaning etc. IS 4251:1967 may be followed as Good Manufacturing practices.

10.0 HYGIENIC CONDITION - The source water shall be collected, processed, handled, stored, packed and marketed in accordance with the hygienic practices given under Annex B of IS 14543:2024. Other clauses shall also be complied in day to day production and quality control activities. Schedule for each activity for this purpose shall be displayed prominently in the factory premises and records of compliance shall be maintained for scrutiny by the Bureau. The hygienic conditions shall also be maintained at the site of water source. A check list for good hygienic practices and food safety system for packaged drinking water processing units is given in Annex H of this product manual.

11.0 REJECTION - Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016. A separate record providing the detailed information regarding the rejected control units and mode of their disposal shall be maintained. Such material shall in no case be stored together with that conforming to the specification.

TABLE 1
LEVELS OF CONTROL

TEST DETAILS				Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		REMARKS
Clause	Requirement	Test Method			No. of Sample	Frequency	
		Clause	Reference				
5.2	Microbiological Requirement						
5.2.1	Escherichia coli	--	IS 15185	R	One	Each control unit	
5.2.2	Coliform Bacteria	--	IS 5401 (Part-1) or IS 15185	R	One	Each control unit	
5.2.3	Faecal Streptococci and Staphylococcus aureus	--	IS 5887 (Part-2) or IS 15186	S	One	Once in month	
5.2.4	Sulphite Reducing Anaerobes	--	Annex C of IS 13428	R	One	Each control unit	
5.2.5	Pseudomonas aeruginosa	--	Annex D of IS 13428 or ISO 16266-2	R	One	Each control unit	
5.2.6	Aerobic Microbial Count	--	IS 5402 Part 1	R	One	Each control unit	
5.2.7	Yeast & Mould	--	IS 16069 (Part 1)	R	One	Each control unit	
5.2.8	Salmonella and Shigella	--	IS 15187 & IS 5887 (Part-7), respectively	S	One	Once in month	
5.2.9	Vibrio cholera and V. parahaemolyticus	--	IS 5887 (Part-5/Sec 1)	S	One	Once in month	

TABLE 1 (continued)

TEST DETAILS				Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		REMARKS
Clause	Requirement	Test Method			No. of Sample	Frequency	
		Clause	Reference				
5.3	Description	5.3	IS 14543	R	One	Each Control Unit	
5.3 and Table 1	i) Colour	-	IS 3025 (Part 4)	R	One	Each Control Unit	
-do-	ii) Odour	-	IS 3025 (Part 5)	R	One	Each Control Unit	
-do-	iii) Taste	-	IS 3025 (Part 8)	R	One	Each Control Unit	
-do-	iv) Turbidity	-	IS 3025 (Part 10)	R	One	Each Control Unit	
-do-	v) Total Dissolved Solids	-	IS 3025 (Part 16)	R	One	Each Control Unit	
-do-	vi) pH	-	IS 3025 (Part 11)	R	Manufacturer shall put in place adequate inspections and in process controls to ensure conformity of this requirement as per the standard		
5.3 and Table 2	i)Barium (as Ba)	-	Annex G of IS 13428 or IS 15302 or IS 3025 (Part 2) or IS 3025 (Part 65)	S	One	Once in a month	
-do-	ii)Copper (as Cu)	-	IS 3025 (Part 42) or IS 3025 (Part 2) or IS 3025 (Part 65)	S	One	Once in a month	
-do-	iii)Iron (as Fe)	-	IS 3025(Part 53) or IS 15303 or IS 3025 (Part 2) or IS 3025 (Part 65)	S	One	Once in a month	
-do-	iv)Manganese (as Mn)	-	IS 3025 (Part 59) or IS 3025 (Part 2) or IS 3025 (Part 65)	S	One	Once in a month	
-do-	v)Nitrate (as NO3)	-	IS 3025 (Part 34/Sec 1) or IS 3025 (Part 75)	S	One	Once in a week	
-do-	vi)Nitrite (as NO2)	-	IS 3025 (Part 34/Sec 1) or IS 3025 (Part 75)	R	One	Once in a week	
-do-	vii)Fluoride (as F)	-	IS 3025 (Part 60/Sec 1) or IS 3025 (Part 60/Sec 2) or IS 3025 (Part 75)	S	One	Once in six months	
-do-	viii)Zinc (as Zn)	-	IS 3025 (Part 49) or IS 3025 (Part 2) or IS 3025 (Part 65)	S	One	Once in a month	

-do-	ix)Silver (as Ag)	-	Annex K of IS 13428 or IS 3025 (Part 2) or IS 3025 (Part 65) or IS 3025 (Part 79)	S	One	-Once in six months -Once in a month for licensees using silver in any form.	
-do-	x)Aluminium (as Al)	-	IS 3025 (Part 2) or IS 3025 (Part 55) or IS 15302 or IS 3025 (Part 65)	R	One	Once in a week	
-do-	xi)Chloride (as Cl)	-	IS 3025 (Part 32) or IS 3025 (Part 75)	R	One	Each control unit	
-do-	xii)Selenium (as Se)	-	IS 3025 (Part 2) or IS 3025 (Part 56) or IS 15303 or IS 3025 (Part 65)	S	One	Once in six months	
-do-	xiii) Sulphate (as SO4)	-	IS 3025 (Part 24/Sec 1) or IS 3025 (Part 24/Sec 2) or IS 3025 (Part 75)	R	One	Each control unit	
-do-	xiv) Alkalinity (as HCO3)	-	IS 3025 (Part 23)	R	One	Each control unit	
5.3 and Table 2	xv) Calcium (as Ca)	-	IS 3025 (Part 40) or IS 3025 (Part 2) or IS 3025 (Part 65)	R	One	Once in a week	
-do-	xvi) Magnesium (as Mg)	-	IS 3025 (Part 46) or IS 3025 (Part 2) or IS 3025 (Part 65)	R	One	Once in a week	
-do-	xvii) Sodium (as Na)	-	IS 3025 (Part 45) or IS 3025(Part 2) or IS 3025 (Part 65)	S	One	Once in six months	
-do-	xviii) Residual Free Chlorine	-	IS 3025 (Part 26)	R	One	Each control unit	
-do-	xix) Phenolic compounds (as C6H5OH)	6	IS 3025 (Part 43/Sec 1)	S	One	Once in a month	
-do-	xx) Mineral Oil	6	IS 3025 (Part 39)	S	One	Once in a month	
-do-	xxi) Anionic surface-active agents (as MBAS)	-	IS 3025 (Part 68) or IS 3025 (Part 78)	S	One	Once in a month	
-do-	xxii) Sulphide (as H2S)	-	IS 3025 (Part 29)	R	One	Once in a week	
-do-	xxiii) Antimony (as Sb)	-	Annex H of IS 13428 or IS 3025 (Part 2) or IS 15303 or IS 3025 (Part 65)	S	One	Once in a month	

-do-	xxiv) Borates (as B)	-	Annex J of IS 13428 or IS 3025 (Part 2) or IS 3025 (Part 65)	S	One	Once in a month	
-do-	xxv) Bromates (as BrO3)	-	IS 3025 (Part 67)	S	One	Once in six months	
PARAMETERS CONCERNING TOXIC SUBSTANCES							
5.3 & Table 3	i) Mercury (as Hg)	-	IS 3025 (Part 48) or IS 3025 (Part 65)	S	one	Once in six months	
-do-	ii) Cadmium (as Cd)	-	IS 3025 (Part 2) or IS 3025 (Part 41) or IS 3025 (Part 65)	S	one	Once in six months	
-do-	iii) Arsenic (as As)	-	IS 3025 (Part 2) or IS 3025 (Part 37) or IS 3025 (Part 65)	S	one	Once in six months	
-do-	iv) Cyanide (as CN)	2	IS 3025 (Part 27/Sec 1) or IS 3025 (Part 27/Sec 2) or IS 3025 (Part 27/Sec 3)	S	one	Once in six months	
-do-	v) Lead (as Pb)	-	IS 3025 (Part 2) or IS 3025 (Part 47) or IS 3025 (Part 65)	S	one	Once in six months	
-do-	vi) Chromium (as Cr)	-	Annex K of IS 13428 or IS 3025 (Part 2) or IS 3025 (Part 65)	S	one one	Once in six months Once in six months	
-do-	vii) Nickel (as Ni)	-	Annex L of IS 13428 or IS 3025 (Part 2) or IS 3025 (Part 65)	S	one	Once in six months	
-do-	viii) Polychlorinated biphenyl (PCB)	-	Annex M of IS 13428	S	one	Once in six months one	
-do-	ix) Polynuclear aromatic hydrocarbons	-	APHA 6440	S	one	Once in six months	
-do-	x) Uranium		IS 3025(Part 65) or IS 14194 (Part 3)	S	one	Once in six months	

PARAMETERS CONCERNING RADIOACTIVE RESIDUES

TEST DETAILS				Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		REMARKS
Clause	Requirement	Test Method			No. of Sample	Frequency	
		Clause	Reference				
5.3 & Table 4	i) Alpha emitters	-	IS 14194 (Part 2)	S	one	Once in five years	
-do-	ii) Beta emitters	-	IS 14194 (Part 1)	S	one	-do-	
PESTICIDE RESIDUES							
5.4	Pesticide Residues	5.4	Annex D of IS 14543				
i)	Pesticide residues considered individually	5.4.1	IS 14543**	S	One	Once in a year	
ii)	Total pesticide residue	-do-	-do-		-do-	-do-	
-	Shelf Life Assessment	B 8.9	Annex B of IS 14543	R	Once in six months each type of container shall be tested for shelf life assessment		

FORM 1
REPORT FOR FOUR HOURLY PH TESTING

Date of Production	Batch Number / unit number	pH	Remarks
1	2	3	4

FORM 2
REPORT FOR DAILY/ EACH CONTROL UNIT TESTING

Date of Production	Batch/ control unit no.	Colour	Odour	Taste	Turbidity	TDS	Chloride	Sulphate	Alkalinity	Residual Free chlorine	E. Coli	Coliform	Sulphite reducing anaerobes	*Pseudomonas aeruginosa*	Aerobic microbial count		Yeast & Mould	Remarks
															20-22 ^{0}C	37 ^{0}C		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18

FORM 3
REPORT FOR WEEKLY & MONTHLY TESTING

Date of Production	Batch/ control unit no.	Barium	Copper	Iron	Manganese	Nitrate	Nitrite	Aluminium	Calcium	Sulphide	Magnesium	Antimony	Borate	Phenolic Compounds	Mineral Oil	Zinc	Anionic Surface-Active Agents	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

FORM 4

FORMAT FOR TESTING FROM BIS RECOGNIZED OUTSIDE LABORATORY

Month & Year	Batch No./DOM	Type of packing	Dates on which sample sent	Lab to which sample sent	Test report number & date	Results	Remarks

1. REPORT FOR WEEKLY/ MONTHLYTEST

i. Faecal streptococci and *S. aureus*, Salmonella and Shigella, *Vibrio cholera* and *Vibrio parahaemolyticus*

ii. Mineral Oil, Zinc, Anionic Surface-Active Agents, Phenolic Compounds, Antimony, Borates,

iii. Nitrate, Barium, Copper, Iron, Manganese (If done from BIS recognized outside laboratory)

2. REPORT FOR SIX MONTHLYTEST

i. Mercury, Cadmium, Arsenic, Cyanide, Lead, Chromium, Nickel, Fluoride, Selenium, Sodium, PCB, PAH, Bromates, Uranium

ii. Silver (as applicable)

iii. Pesticide Residues

3. REPORT FOR FIVE YEARLY TEST

i. Radio Active Residues (Alpha and Beta Emitters)

FORM 5

SOURCE WATER TESTING (3 MONTHLY TESTS)

Month & Year	Source of water	In-house testing	Outside testing (if done)			Record of in-house testing/outside TR	Results	Remarks
			Name of lab	sample sent on	TR No. & Date			

FORM 6

RECORD FOR PLASTIC CONTAINERS USED FOR PACKING WATER

Date of receipt	Type of packing material	Name of supplier	Quantity received	Whether ISI marked	Details of outside testing		Results			Remarks
					Name of lab	Date of sending samples	Overall migration	Colour migration	Remaining parameters as per IS 15410	

FORM 7

RECORDS FOR SHELF LIFE ASSESSMENT (SEPARATE FOR EACH TYPE OF CONTAINER BEING USED)

Date on which sample kept	Batch No./DOM	Type of packing whose sample kept	Declared shelf life	Periodicity of testing	Date of Testing	Requirements Tested	Results	Remarks

FORM 8

FORMAT FOR PE FILM

Date of Receipt of Rolls	Name of Supplier	Quantity Received (No. of Rolls)	Details of Test report from O S Lab. With date	Description	Film Form	Winding of Film	Odour	Thickness	Width	Overall Migration	Tensile Strength	Elongation at Break	Dart Impact Resistance	Results	Remark
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

FORM 9

FORMAT FOR POUCH TESTING

Date of Pouch Production	Time of production	Total quantity produced	Drop Test					Stack Load Test	Ink Adhesion of Printed Pouches	Product Resistance of Printed Pouches	Water Potability Test	Results	Remarks
			Machine No.										
			1	2	3	4	Etc.						
(1)	(2)	(3)	(4)					(5)	(6)	(7)	(8)	(9)	(10)

TABLE 2

GUIDELINES ON ENSURING CONFORMITY OF CONTAINERS USED FOR PACKAGED DRINKING WATER

Type of container	Parameters	Options for mode of conformity	Frequency to be followed by licensee
a) Plastic Jars	i) Overall migration and colour migration as per Clause 6 of IS 14543 & ii) Conformity to IS 15410	i) 'ISI' marked, OR ii) In-house Test Reports of licensee, if facilities exist; OR iii) BIS recognized outside laboratory Test Report of the samples (not older than 6months from the date of purchase); OR iv) Combination of the above.	Once in six months, sample from one consignment of plastic jars of each size/material procured from a single source (i.e. supplier) shall be tested as per the modes of conformity given in column 3 (Not required if material is ISI marked).
b) Plastic Bottles, Glass/ cups	i) Overall migration and colour migration as per Clause 6 of IS 14543 & ii) Conformity to IS15410	i) 'ISI' marked OR ii) In-house Test Reports of licensee, if facilities exist OR iii) BIS recognized outside laboratory Test Report of the samples (not older than 6 months from the date of purchase)	Once in six months, sample from one consignment of plastic bottles / glasses / cups of each type /shape /capacity / material procured from a single source (i.e. supplier) shall be tested as per the modes of conformity given in column 3 (Not required if material is ISI marked)
c) Plastic cap (closures) of containers	Overall migration and colour migration as per Clause 6 of IS 14543	i) Declaration/certificate w.r.t foodgrade quality, as permitted under IS 14543, and In house test report of licensee, if facilities exist OR ii) BIS recognized outside laboratory test report of samples (not older than 6 months from the date of purchase)	Once in six months, sample from one consignment of plastic caps/closures of each size/material procured from a single source (i.e. supplier) shall be tested as per the modes of conformity given in column 3 (Not required if material is ISI marked).

Note : Licensee to keep records of receipt for all types of containers and closures received, along with the corresponding test certificate in case of ISI marked consignment or test reports of samples tested in-house or got tested as per the specified frequency at BIS recognized laboratory, to be verified by BIS during periodic inspections for adequacy of the system being followed by licensee to control quality of packaging material received, accepted, rejected and method of disposal.

TABLE 3
Levels of control for Polyethylene Flexible Pouches for the packing of Packaged Drinking Water as per IS 15609

TEST DETAILS				Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		
Clause	Requirement	Test Method			No. of Samples	Lot size	Remarks (Modes of Conformity etc.)
		Clause	Reference				
5	Material	5	IS 15609	S	One	Each consignment of Polyethylene film	i) ISI Marked, OR ii) BIS recognized outside laboratory Test Report of the samples, OR iii) Test certificate issued by PE resin supplier.
6.1		Requirement for Polyethylene Film					
6.1.1	Description	6.1.1	IS 15609	R	One	Each roll of polyethylene film	All rolls to be checked before using the same for making pouches. All such rolls which do not conform to the requirement shall be rejected
6.1.2	Film Form	6.1.2	-do-	R	-do-	-do-	-do-
6.1.3	Winding of film	6.1.3	-do-	R	-do-	-do-	-do-
6.1.4	Odour	6.1.4	-do-	R	-do-	-do-	-do-
6.1.5	Thickness	6.1.5	-do-	R	-do-	-do-	-do-
6.1.6	Width	6.1.6	-do-	R	-do-	-do-	-do-
6.1.7	Overall Migration	6.1.7	-do-	S	-do-	One consignment from each source (i.e. supplier) initially and subsequently once every six months for each source (i.e. supplier)	i) ISI Marked, OR ii) In house test report, if facility exist with the licensee OR iii) Outside approved laboratory test report of the sample If the sample does not conform to the requirement, the consignment shall be rejected.

Table 3 contd…

TEST DETAILS				Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		
Clause	Requirement	Test Method			No. of Samples	Lot size	Remarks
		Clause	Reference				
6.1.8	Tensile strength	6.1.8	-do-	S	-do-	-do-	-do-
6.1.9	Elongation of break	6.1.9	-do-	S	-do-	-do-	-do-
6.1.10	Dart impact resistance	6.1.10	-do-	S	-do-	-do-	-do-
	7 Requirement for Flexible Pouches						
7.2	Water Potability Test	Annex E	-do-	S	-do-	Once in two months	Sample of each size shall be tested by rotation so that all the sizes shall be tested in one operative period.
7.3	Stack load Test	Annex F	-do-	R	-do-	One day production	If the sample does not conform to the requirement the same day production shall be rejected.
7.4	Drop test	Annex G	-do-	R	-do-	Every hour for each machine	If the sample does not conform to the requirement, the licensee shall follow the criteria for acceptance and retesting as per clause G-3 of IS 15609:2005. If it still does not conform then the same

							day production shall be rejected.
7.5	Ink Adhesion of Printed Pouches	Annex H	IS 15609	R	-do-	One day production	If the sample does not conform to the requirement the same day production shall be rejected. All rolls to be checked before using the same for making pouches. All such rolls which do not conform to the requirement shall be rejected.
7.6	Product resistance of printed Pouches	Annex J	-do-	R	One	-do-	-do-
	Handling of polyethylene flexible film meant for packing of packaged drinking water in pouches	Annex E	IS 14543	R	Manufacturer shall ensure that guidelines for handling of polyethylene flexible film meant for packing of packaged drinking water in pouches as per Annex E of IS 14543:2024 are followed		

TABLE 4

Levels of control for Paperbased Multilayer Laminated/Extruded Composite Cartons (Aseptic

and Non-Aseptic) For Processed Liquid Food Products and Beverages as per IS 17753

TEST DETAILS			Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		
Requirement	**Test Method**			**No. of Samples**	**Lot size**	**Remarks (Modes of Conformity etc.)**
	Clause	**Reference**				
Material, Cl. 4.1	4.1	IS 17753	S	One	Each consignment of paper based multilayer composite sheet	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Paper Board, Cl. 4.1.1	---	IS 16983/IS 1776/ IS 12999	S	One	Each consignment	i) BIS recognized outside laboratory Test Report of the samples, OR ii) Test certificate issued by supplier
Polyethylene, Cl. 4.1.2	---	IS 2508/IS 14500/ IS 10146/ IS 16738	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Aluminium Foil, Cl. 4.1.3	4.3 of IS 8970	IS 8970 and Table 1 of IS 17753	S	One	Each consignment	i) BIS recognized outside laboratory Test Report of the samples, OR ii) Test certificate issued by supplier
Caps, Cl. 4.1.4	---	IS 10910	S	One	Each consignment	i) ISI Marked, OR ii) BIS recognized

						outside laboratory Test Report of the samples, OR iii) Test certificate issued by supplier
Printing Inks, Cl. 4.1.6		IS 15495	S	One	Each consignment	i) BIS recognized outside laboratory Test Report of the samples, OR ii) Test certificate issued by supplier
Requirement for Paper Based Multilayer Laminated/Extruded Composite Sheets						
Description, Cl. 5.1	5.1	IS 17753	R	One	Every hour	
Overall Migration, Cl. 5.2.1	----	IS 9845	R	-do-	Once in a fortnight	-do-
Specific Migration Test, Cl. 5.2.2	----	IS 9845 and IS 3025(Part-2)/ IS 5158(A-4)/ IS 9873(Part-6)	R	-do-	Every month	-do-
Vibration Leakage Test, Cl. 5.2.3	Annex-B	IS 17753	R	-do-	Every 24 hours	-do-
Storage Test, Cl. 5.2.4	---	IS 8639	R	-do-	Every month	-do-
Water Vapour Transmission Rate (WVTR) and Oxygen Transmission Rate (OTR), Cl. 5.2.5	Annex-C of IS 17753	IS 17753/ISO 2528(for WVTR) And ISO 15105-2(for OTR)	R	-do-	Once in a fortnight	-do-
Print Resistance Test, Cl. 5.2.6	Annex-D	IS 17753	R	-do-	Every 24 hours	-do-
Ink Adhesion Test Cl. 5.2.7	Annex-E	IS 17753	R	-do-	Every 24 hours	-do-

TABLE 5

Levels of control for Aluminium Cans for Packaged Natural Mineral Water and Packaged Drinking Water as per IS 18285

TEST DETAILS			Test equipment requirement R: required (or)S: Sub-contracting permitted	LEVELS OF CONTROL		
Requirement	Test Method			No. of Samples	Lot size	Remarks (Modes of Conformity etc.)
	Clause	Reference				
Material, Cl. 5.1	5.1	IS 504 (Part 1 to 12) and IS 504 (Part 13 to 16)	S	One	Each consignment of paper based multilayer composite sheet	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier.
Temper, Cl. 5.2	---	IS 16983/IS 1776/ IS 12999	S	One	Each consignment	Test Reports from BIS recognized outside laboratory, OR Test certificate issued by supplier
Mechanical properties of the alloys for the body and closure, Cl. 5.3	---	IS 18285	S	One	Each consignment	Test Reports from BIS recognized outside laboratory, OR Test certificate issued by supplier
Can body, Cl. 6.1.1	6.1.1	IS 18285				By visual
Can Ends Cl. 6.1.2	6.1.2	IS 18285	S	One	Each consignment	Test Reports from BIS recognized outside laboratory, OR Test certificate issued by supplier
Internal finish Cl. 6.2	6.2	IS 18285				By visual
External Coating Cl. 6.3	6.3	IS 18285	S	One	Each consignment	Test Reports from BIS recognized outside laboratory, OR Test certificate issued by supplier
Shape and Dimension Wall thickness Cl. 6.4.1	Table 3	IS 18285	S	One	Each consignment	Test Reports from BIS recognized outside laboratory, OR Test certificate issued by supplier
Shape and nominal dimension of closure components Cl. 6.4.2	Table 4	IS 18285	S	One	Each consignment	Test Reports from BIS recognized outside laboratory, OR Test certificate issued by supplier

Top Load / Axial Load / Column Strength Cl. 7.1.1	7.1.1	IS 18285	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Enamel Rater Criteria Cl. 7.1.2	7.1.2	IS 18285	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Air Pressure Test Cl. 7.1.3	---	IS 2471	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Slip Angle Test / Wall Mobility Test Cl. 7.1.4	Annex-B	IS 18285	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Testing of Ends Cl. 7.2	7.2	IS 18285	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Overall Migration Limit Cl. 7.3.1	---	IS 9845	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Specific Migration Limit Cl. 7.3.2	---	IS 9845	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier
Water Potability Test Cl. 7.4	---	IS 2500(Part-1)	S	One	Each consignment	i) Test Reports from BIS recognized outside laboratory, OR ii) Test certificate issued by supplier

Annex F

Guidelines for Special Situations

F-1 Change of source of raw water or change in process

As and when there is change in source water or addition of new source of raw water, it shall be intimated to BIS. The raw water collected from the new source shall be tested in accordance with Clause 7 of SIT and the processed water produced from such source water shall be tested for conformity to IS 14543 from BIS recognized outside lab. The reports of source water and the product water produced from the new source shall be submitted to BIS for approval before commissioning for regular production and marking.

In case the manufacturer conducts remineralization as part of treatment process, any change in the ingredients shall be declared by the manufacturer. Further, the ingredients shall be of food/pharma grade quality. The test certificate indicating the individual ingredients and the respective compositions of each mineral/ingredient in the product shall be obtained from the manufacturer

F-2 Concurrent use of raw water from two different sources

In case of concurrent use of raw water of two different types of sources (for example water being extracted through own bore-well and also obtained from municipal source), the production from each source shall be assigned a different batch number and separately tested as per SIT for conformity of the product water, provided production lines are separate. Accordingly, records of production and testing of packaged drinking water produced using both the sources shall be kept by the licensee. However, when there is more than one source of raw water but processing plant is one, the raw water collected from the new source shall be tested in accordance with Clause 7 of SIT and the processed water produced from such source water shall be tested for conformityto IS 14543 from BIS recognized outside lab. The reports of source water and the product water produced from the new source shall be submitted to BIS for approval before commissioning for regular production and marking.

F-3 Modification in the process

F-3.1 In case of any addition, alteration and/or change in the production process without any change in raw water source, the processed water produced from such changed process shall be tested for conformity to IS 14543 from BIS recognized outside lab. The reports of the product water produced from the changed process shall be submitted to BIS for approval before commissioning for regular production and marking.

F-3.2 Testing of product water so produced by using different processes shall be carried out as per SIT and records be kept separately by the licensee.

Note 1: Testing for parameters concerning radio-active residues need not be done under above circumstances provided the source of raw water remains the same.

Note 2: Any change in process may require change of label. Therefore licensee may beadvised to prepare fresh label incorporating all marking details.

F-4 Shelf-life

F-4.1 **Declared shelf life for Packaged Drinking Water in all type of packing materials shall not be less than 30 days**. If the manufacturer intends to declare a longer shelf-life than minimum 30 days, study shall be conducted on each type of packing whenever there is a change in the source of raw water/manufacturing/packing process, whichever is earlier. The shelf-life shall be declared on the labels as per 7.1 (g) of IS 14543. It shall be based on in-house shelf life study for which proper records be maintained conforming to declared shelf life.

F-4.2 Subsequently, for any change in the shelf life declared on the labels, the manufacturer shall inform BIS in advance along with shelf- life study reports and submit fresh label for approval. Tests to be carried out for shelf life studies are requirements given in Table 1 of IS 14543 along with routine microbiological tests as per IS 14543.

F-5 Label/marking approvals

F-5.1There is a practice that applicants/licensees submit labels to BIS for approval. Wherever any applicant/licensee submits labels to BIS for approval, it shall be informed to them that the labels conforming to the marking details as mentioned in clause 7 of IS 14543 along with the brand names are tobe submitted to by licensees to BIS for information only, which will only be noted by BIS for records.

F-5.2 The compliance of such labels to the requirement of clause 7 shall be ensured by licensees. However, in case non-compliance to Clause 7 is observed by BIS and communicated in writing (provided brand name/trademark is not registered) to licensee, licensee shall make necessary rectification and resubmit the label for confirmation to concerned BIS Branch Office within 15 days. Decision of BIS regarding whether labeling is complying or not with clause 7 of IS 14543 shall be final.

F-5.3 However, in case the brand name/trademark submitted by the firm is a registered brand name/trademark, no objection to its use shall be raised even if the brand name/trademark is found to be in non-compliance to Clause 7. However, in such a case, the Head BO concerned shall communicate the details of such cases to CMD-2 for taking up with the concerned authorities.

Annex G

CHECKLIST FOR GOOD HYGIENE PRACTICES AND FOOD SAFETY SYSTEMS FOR PACKAGED DRINKING WATER PROCESSING UNITS

Sl No.	Requirements	Answers		Remarks
(1)	(2)	Adequate (3)	Not Adequate (4)	(5)
i)	**Building, Facilities and Locations**			
a)	Is the facility location area free from objectionable odour, smoke, dust or other contaminants and not subject to flooding?			
b)	Are the areas immediately surrounding the buildings, roads, packing places, suitably paved, grassed and kept clean?			
c)	Is adequate facility for drainage of surroundings available and is designed to handle peak load?			
d)	Is the facility used for processing water, free from Domestic animals?			
e)	Is the facility surroundings free from refuse, waste materials, rubbish, overgrown weeds and grasses?			
f)	Are there adequate facilities for the disposal of effluents and wastes?			
g)	Are the buildings and facilities of sound construction and maintained in good repair?			
h)	Are the buildings and facilities designed and maintained to prevent entrance and harboring of pests and entry of contaminants?			
i)	Are building and facilities designed to facilitate Hygienic operations?			
ii)	**Plant and Physical Facilities**			
a)	Is adequate lighting provided at working station, hand washing area, and storage areas? (as per B-5.4.6)			
b)	Are light fixtures safety type and protected to prevent contamination in the event of breakage in the processing and packing area?			
c)	Are the processing areas well-ventilated, to minimize odours , noxious fumes and condensates?			
d)	Are the barriers/traps provided at drains to prevent the entry of rodents from the drains into the facility?			
e)	Is effective screening provided against entry of birds, animals, insects, rodents, etc			

f) Are doors, hatches and other openings to the building constructed to render opening pest proof? g) Are floors, walls, ceilings, windows and doors so designed and constructed as to render them washable? h) Is product in process and storage area adequately protected from any leakage from external surfaces and other sources of contamination? i) Are immediate surroundings of extraction or collection protected from entry of unauthorized persons?			

iii) Raw Water Processing a) In case of extraction/collection for processing are the sources free from contaminations/ impurities? b) Are water storage tanks, pipe lines utilized for handling water constructed and so designed as to facilitate cleaning and inspection? c) Are inspections of containers/carriers/pipe lines of raw water supply performed for the material of construction and cleanliness? d) Are possible chances of contamination from incoming water assessed? e) Are water storage tanks regularly cleaned and records maintained to prevent entry of pests and potential contaminator? f) Are the processed water contact surfaces regularly cleaned and sanitized and records maintained? **iv) Post-processing Handling** a) Are cleaning operation of bottles/containers so done as to preclude contamination of product and product contact services with residues? b) Has absence of residual cleaning chemicals been ensured? c) Is preventive maintenance in place for all processing machinery and equipment? d) Are the primary packing materials and containers of food grade conforming to relevant Indian Standards? e) Are packing and sealing, where required, monitored? f) Are physical hazards prevented from entering into processed water? g) Are glassware excluded from production area? **v) Packaging Material and Finished Goods Storage** a) Are the primary packing materials and containers of food grade conforming to relevant Indian Standards? b) Are the packaging materials inspected to ensure their suitability? c) Are the packing materials especially primary packing material properly stored and properly handled to preclude contamination? d) Are the packaging materials purchased, stored and handled in sanitary manner? **vi) Finished Product Storage and Distribution** a) Is first-in-first out (FIFO) of stored product maintained? b) Is storage properly sanitized and disinfected periodically? c) Are stores protected from pest infestations? d) Are coding and tracking clear and in place? e) Are the instruction clear and in place? f) Are hold/release procedure in place and product			

identified? g) Are the records maintained for batch number, date of and volume of production? h) Are transport containers/vehicles maintained in clean condition? **vii) Customer Handling of Products** a) Are the storage instructions provided on containers? b) Is the shelf life period/best before mentioned on containers ? c) Are instructions provided for handling defective/damaged products? **viii) Sanitary Facilities and Control** a) Are toilets provided in sufficient numbers and are they provided with: 1) Doors of self-closing type? 2) Do not open directly into processing areas? 3) Hand washing signs provided in appropriate language? 4) Proper lighting and ventilation? 5) Proper maintenance to keep in clean and tidy manner? b) Are hand washing facilities provided adequately and conveniently to wash hands, foot, elbow or sensor operated taps? c) Are germicidal soaps/soap solution and hand drying facility provided? d) Are notice/ instructions prominently pasted in toilet directing employees to wash their hands on entry and re-entry into the packaged drinking water handling areas? e) Are the refuse receptacles self closing type maintained in a manner to protect from contaminations? **ix) Personnel Hygiene and Habits** a) Is any individual assigned to supervise overall sanitation of plant and personnel? b) Is there any person responsible for day-to-day monitoring of health and hygiene? c) Are the medical records of the employees in processing, packing and maintenance been periodically maintained? d) Are the personnel with infectious diseases, skin infection and open lesion or any other source of microbial contamination excluded from working in process/packing areas? e) Are the following personnel hygiene practices regularly maintained and monitored: 1) Clean outer garments- protective clothing? 2) Personal cleanliness-finger nails? 3) Head cover-hair restraints, caps, head bands, beard cover?			

4) No tobacco in any form-smoking, chewing? 5) No eating at work stations? f) Are protective clothing stored on the premises and not allowed to be used for outside wear? g) Are there clear legible notices defining limits of no smoking areas such as 'NO SMOKING BEYOND THIS POINT' displayed? h) Have the personnel been imparted training or hygienic food handling, processing food and personal hygiene?			

CONCLUSION: OVERALL ASSESSMENT OF HYGIENIC CONDITIONS – SATISFACTORY/ NOT SATISFACTORY