

BUREAU OF INDIAN STANDARDS
BANGALORE BRANCH LABORATORY
CHEMICAL

29 June 2016

Subject: Comments on IS 15410:2003 read with IS 2798:1998 & IS 9845:1998

BNBOL has recently started testing of samples of containers for packaging of Packaged Natural Mineral Water (PNMW) and Packaged Drinking Water (PDW) as per IS 15410:2003. Referred Indian Standards for test methods for different tests are IS 2798:1998 and IS 9845:1998.

During issuing test reports for IS 15410:2003 (parent product specification), some observations have been made which are detailed below:

S. No.	Ref. cl. Of IS 15410:2003	Comments
1.	4.1: The clause details the requirements for material used for plastic containers.	<p>(i) As per the statement of clause “The material used for plastic containers shall be made of polyethylene (PE) conforming to IS 10146 OR polyvinyl chloride (PVC) conforming to IS 10151 OR polyalkylene terephthalate (PET and PBT) conforming to IS 12252 OR polypropylene conforming to IS 10910 OR polycarbonate conforming to IS 14971 OR polystyrene conforming to IS 10142.”</p> <p>(ii) It is inferred that the clause is a guideline only for the manufacturer to procure any one of the materials conforming to relevant ISS for manufacture of containers. As such the clause has got nothing to do with testing at the lab’s end.</p> <p>(iii) But few of our BOs/IOs ask for the results for cl.4.1 in the test report.</p> <p>(iv) The matter may please be clarified.</p>
2	4.6.3 & 4.6.4: The clauses deal with tests required for checking leakage as per methods specified in IS 2798.	<p>(i) The tests (which are of prime importance for evaluation of performance of containers during transit) are as follows:</p> <ul style="list-style-type: none"> • Closure leakage, cl.4.6.3 of IS 15410 read with cl.6.1 of IS 2798. • Vibration leakage, cl.4.6.3 of IS 15410 read with cl.6.2 of IS 2798. • Drop test, cl.4.6.4 of IS 15410 read with cl.8 of IS 2798 <p>(ii) Observations of these tests are direct reflection of nature/size/dimensions/design etc. of containers and closures as well as the manner of closing the containers at the bottling plants. Hence for true observations/remarks on conformity, testing lab requires containers which have been filled and originally closed (at the bottling plant) with</p> <ul style="list-style-type: none"> • closures made of metal or plastic pilfer-proof in character (cl.4.2 of IS 15410) as specified in relevant ISS (2nd para of cl.8.5 of IS 2798). • the usual closure in the manner in which it is intended to be used (3rd para of cl.6.2.1 of IS 2798). <p>(iii) It may please be noticed that a total of six (three for vertical fall-Set 1 and three for horizontal fall -Set 2) filled containers are required for ‘Drop Impact Test’, one filled container is required for ‘Closure Leakage Test’ and one filled container is required for ‘Vibration Leakage Test’. It is also worth mentioning that the tests are of destructive nature (repeat testing cannot be carried out).</p> <p>(iv) Considering the above points, the quantity mentioned at BIS website for IS 15410:2003 by all the BIS labs is 10 filled containers.</p> <p>(v) But in case of 20 litre PET jars, we are receiving only 3 filled jars from ROs/BOs/IOs. On requesting for more filled containers, it is replied that only three filled containers are drawn/sent for testing as mentioned in the product manual for IS 15410.</p> <p>(vi) It is proposed that product manual may be amended suitably and at least 10 filled containers (irrespective of size) (including one filled container for Water Potability as per cl.4.6.6) closed by the bottling plant with the usual closures (pilfer-proof) as specified in the ISS should be drawn and sent for testing as per IS 15410:2003.</p>
3	4.6.5: Migration Test	<p>(i) As per last sentence of cl.4.6.5 “The maximum extraction values (for Overall Migration) for the container material shall not exceed 10 mg/dm² OR 60 mg/l”.</p>

		<p>(ii) But few of our BOs/IOs ask for the results for this parameter in both units which is not practicable in all containers due to different shapes, designs, contact surface areas etc. for the same volume.</p> <p>(iii) The matter may please be clarified.</p>
4	4.6.5: Migration Test	<p>(i) As per the first sentence of cl.4.6.5 of IS 15410 (Parent product specification), "Representative samples of containers shall be subjected to overall migration test with distilled water".</p> <p>(ii) But few of our BOs/IOs ask for the results for this parameter for Closures, Sealing Gaskets and Liners etc. as mentioned in cl.8 of IS 9845:1998 (Test method standard applicable for various product standards) although test requirement for the same is not specified in IS 15410 (Parent product specification).</p> <p>(iii) Also, the method specified in cl.8 of IS 9845 appears to be applicable for bottles/jars made of glass (not for PET bottles/jars) only.</p> <p>(iv) The matter may please be clarified.</p>
5	4.6.5: Migration Test	<p>(i) As per the first sentence of cl.4.6.5 of IS 15410 (Parent product specification), "Representative samples of containers shall be subjected to overall migration test with distilled water".</p> <p>(ii) But some of our BOs/IOs ask for the results for the test of Colour Migration cl.11 of IS 9845:1998 (Test method standard applicable for various product standards) although test requirement for the same is not specified in IS 15410 (Parent product specification).</p> <p>(iii) The matter may please be clarified.</p>

Competent Authority may kindly consider the above facts for making necessary changes/amendment in the specifications/product manual.

Sc.-E & Head (BNBOL)

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