



**PRODUCT MANUAL FOR
BORIC ACID
ACCORDING TO IS 10116:2015**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.

1.	Product	:	IS 10116:2015
	Title	:	Boric Acid
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	Not Applicable
b)	Grouping guidelines	:	Not Applicable
c)	Sample Size	:	Minimum of 500 g
3.	List of Test Equipment	:	Please refer ANNEX – <u>A</u>
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – <u>B</u>
5.	Possible tests in a day	:	All tests except boric acid and moisture percent
6.	Scope of the Licence :		
	"Licence is granted to use Standard Mark as per IS 10116:2015 with the following scope:		
	Name of the product	Boric Acid	
	Grades	As applicable [Special/Technical/Explosives]	
	Form	As applicable, in [Granular/Powder/Crystal/Flakes] Form	

ANNEX A

List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Boric Acid, clause 4.3, Table 1	Distillation assembly
		Weighing Balance (0-500 grams/0.1 gram)
		Hot Plate
		Mannitol (Sorbitol)
		Sodium Hydroxide
		Phenolphthalein Indicator
		Rectified Spirit
		Disodium Tetraborate Hydrochloric Acid
2	Boric Acid and Moisture, clause 4.3, Table 1	Circular glass or aluminium dish with tight fitting cover/lid (100 mm diameter and 100 mm deep)
		Hot Air Oven (0-200 degree Celsius/ 1 degree celcius)
		Vacuum Desiccators with pump and pressure gauge (0-760 mm of Hg/ 10 mm of Hg)
		Guard tube containing fused calcium chloride
3	Water Insoluble Matter, clause 4.3, Table 1	Steam bath
		Weighing Balance (0-500 grams/0.1 gram)
		Gooch crucible or sintered glass crucible No. G4
		Hot Plate
		Thermometer (0-250 degree Celsius/1 degree Celsius)
4	Heavy Metals (As Pb), clause 4.3, Table 1	Hydrochloric Acid
		Hydrogen Sulphide Solution
		Lead Acetate
		Acetic Acid
5	Iron, clause 4.3, Table 1	Hydrochloric Acid
		Sulphuric Acid
		Ammonium Persulphate (Soild)
		Potassium Thiocynate

		n-Butanol
		Ferrous Ammonium Sulphate
6	Calcium, clause 4.3, Table 1	Platinum Basin
		Methanol
		Hydrochloric Acid
		Sulphuric Acid
		Strong Ammonia Solution
		Ammonia-Ammonium Chloride Buffer Solution
		Sodium Sulphide
		EDTA
		Methyl Thymol Blue Indicator
7	Arsenic, clause 4.3, Table 1	Apparatus as per modified Gutzeit method (Fig 1 of IS 2088)
		Lead Acetate
		Acetic Acid
		Arsenic Trioxide
		Absorbent Cotton Wool
		Mercuric Bromide
		Rectified Spirit
		Sulphuric Acid
		Hydrochloric Acid
		Mercuric Bromide
		Potassium Iodide
		Stannous Chloride
		Zinc Granules
		Sodium Hydroxide
8	Sodium, clause 4.3, Table 1	Flame Photometer
		Muffle Furnace
		150 micron sieve
		Platinum Dish (50 ml)
		Hydrochloric Acid
		Nitric Acid
		Hydrofluoric Acid
		Potassium Chloride
		Sodium Chloride
		Silica Gel
9	Chloride, clause 4.5, Table 1	Digital Turbidity Meter (0-1000 NTU/ 0.01 NTU)
		Sintered Glass Funnel No 4 with vacuum pump
10	Sulphate, clause 4.5, Table 1	Digital Turbidity Meter (0-1000 NTU/ 0.01

		NTU)
		Acetic Acid
		Potassium Sulphate
		Sulphate Free Alcohol
		Barium Chloride
11	Phosphates, clause 4.5, Table 1	Sulphuric Acid
		Ammonium Molybdate
		n-methyl-p-aminophenol sulphate (metol)
		Potassium Metabisulphite
		Potassium Dihydrogen Orthophosphate
		Water Bath (Capable of maintaining 60 degree Celsius)
12	All requirements as per 4.2, 4.3, 4.4 and Table 1	<p>Glassware and other items-</p> <ul style="list-style-type: none"> • Nessler Cylinders • Desiccator • Glass containers which can be made airtight and of such a size they they are almost completely filled with the sample • Conical flasks of different capacities • Measuring cylinders of different capacities • Beakers of different capacities • Pipettes of different capacities • Titration apparatus consisting of Burette and Stand • Volumetric flasks of different capacities • Pyrex beaker with watch glass(250 ml) • General laboratory glassware like test tubes with stand etc • Stop watch • Wash Bottle • Dropper and dropping bottle • Filter paper strips (70x50 mm) • Stoppered polyethylene bottles • Tripod stand with iron mesh and spirit lamp

Note-1: The above list is indicative only and may not be treated as exhaustive.

Note-2: Least Count, accuracy, range, specifications of apparatus and reagents shall be as specified in the Indian Standard specification

ANNEX B

Scheme of Inspection And Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

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

3. PACKING AND MARKING – – The Standard Mark, as given in the Schedule of the licence, shall be marked on the container provided always that material so marked conform to requirements of the specification.

3.1 Packing and Marking shall be done as per the provisions of the Indian Standard. In addition, the following shall be incorporated on each container:

- i) BIS Licence Number CM/L—and
- ii) BIS website details i.e. “For details of BIS certification please visit www.bis.gov.in”

4. CONTROL UNIT – For the purpose of this scheme, the quantity of the material of the same grade produced in a continuous run of not more than 8 hours shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – 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.

TABLE 1
LEVELS OF CONTROL

SI No.	(1)				(2)	(3)			
	Test Details					Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
	Cl.	Requirement	Test Method				No. of Sample	Frequency	Remarks
		Clause	Reference						
i)	4.2	Description	4.2	IS 10116:2015	R	One	Each Control Unit	For SQ/TECH/ Explosive	
ii)	4.3, Table 1	Boric Acid	A-2, Annex A	-do-	R	One	-do-	For SQ/TECH/ Explosive	
iii)	4.3, Table 1	Moisture	A-3, Annex A	-do-	R	One	-do-	For TECH/ Explosive	
iv)	4.3, Table 1	Water Insoluble Matter	A-4, Annex A	-do-	R	One	-do-	For SQ	
v)	4.3, Table 1	Heavy Metals	A-5, Annex A	-do-	R	One	-do-	For SQ	
vi)	4.3, Table 1	Iron	A-6, Annex A	-do-	R	One	-do-	For SQ/ Explosive	
vii)	4.3, Table 1	Calcium	A-7, Annex A	-do-	R	One	-do-	For SQ	
viii)	4.3, Table 1	Arsenic	A-8, Annex A	-do-	R	One	-do-	For SQ	
ix)	4.3, Table 1	Sodium	A-9, Annex A	-do-	R	One	-do-	For SQ	
x)	4.4	Chloride	A-10, Annex A	-do-	R	One	-do-	For SQ/ Tech/Explosive	
xi)	4.4	Sulphate	A-11, Annex A	-do-	R	One	-do-	For SQ/ Tech/Explosive	

Note-1: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.

Note-2: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-3: The product is classified into 3 grades SQ, TECH and Explosive. Different tests are applicable to different grades as indicated in the remarks column in the Table 1 under column (3) as specified in the Indian Standard. It follows that in case manufacturer is producing and seeking/operating a licence for only one or two of the grades, the availability of test equipment for only the applicable tests for those grades, is required for the purpose of grant/operation of BIS licence covering those grades in the scope.

