



हाइड्रोफ्लोरिक एसिड, जलीय
भारतीय मानक 10332: 1982 के अनुसार

**PRODUCT MANUAL
FOR HYDROFLUORIC ACID,
AQUEOUS
ACCORDING to IS 10332: 1982**

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 10332: 1982
	शीर्षक Title	:	हाइड्रोफ्लोरिक एसिड, जलीय Hydrofluoric Acid, Aqueous
	संशोधनों की संख्या No. of amendments	:	04
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement. <i>Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.</i>
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	1. If grade EL is tested, grade AR may be covered in the scope of licence. 2. For other cases, each grade/subgrade may be tested to be covered in the scope of licence.

c)	नमूने का परिमाण Sample Quantity	:	500 g minimum. Sampling to be done as per Cl. 5 of IS 10332. <i>Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)</i>
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	-
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	As the licence is operated on Factory Testing basis, complete testing of a sample shall be done in factory. <i>Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies(OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.</i>		
6.	लाइसेंस का दायरा/Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 10332: 1982 with the following scope:		
	Name of the product		Hydrofluoric Acid, Aqueous
	Grades		Technical (Tech)/ Analytical Reagent (AR)/ Electronic (EL)
	Sub Grade (applicable for Technical (Tech) grade only)		Sub grade A - 40 % Sub grade B - 60 % Sub grade C - 70%

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Annex-A

List of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

S.No.	Tests Used in with Clause Reference	Test Equipment/Chemicals/Glassware
1.	Total acidity (as HF) (Table 1, Clause 3.2, Sr. no. i)	• Standard Sodium Hydroxide Solutions • Phenolphthalein Indicator Solution • Ethanol • Dropper • PE Beaker • PE Bottle with Lid • Weighing Balance • Glassware
2.	Residue on ignition (Table 1, Clause 3.2, Sr. no. ii)	• Muffle Furnace • Weighing Balance • Platinum Dish • Water Bath • Fume Cup-Board • Stopwatch • Desiccator • PE bottle with screwed cap
3.	Hydrofluosilicic acid (as H_2SiF_6) (Table 1, Clause 3.2, Sr. no. iii)	• Sodium Chloride • Potassium Chloride • Standard Sodium Hydroxide Solutions • Phenolphthalein Indicator Solution • Glassware • Platinum Dish • Ice • Water Bath • Dropper • Thermometer • Hot Plate • PE Weighing Bottle • Weighing Balance Or • Weighing Balance • Sulphuric Acid • Hydrochloric Acid • Boric Acid Solution • Oxalic Acid Solution • Reducing Solution • Silica Standard Solutions A (1000 ppm of Hexafluorosilicic Acid) and B (20 ppm of Hexafluorosilicic Acid)

		• Water bath / Hot plate • Filter • Glassware • Platinum Crucible • Platinum dish • Photoelectric Absorptiometer • Thermometer • PE Bottle and Beaker • Ammonium Molybdate Solution • Timer
4.	Heavy metals (as Pb) (Table 1, Clause 3.2, Sr. no. iv)	• Hydrochloric Acid • Sodium Acetate Solution • Acetic Acid Solution • Hydrogen Sulphide Water • Standard Lead Solution • Platinum Dish • Glassware • Weighing Balance • PE Weighing Bottle with screwable cap • Water Bath • Dropper • Hot Plate • Graduated Pipette Or • Colorimeter • Standard Lead Solution • Citric Acid Solution • Potassium Cyanide • Ammonium Hydroxide • Bromothymol Blue Indicator • Nitric Acid Solution • Dithizone • Perchloric Acid • Platinum Dish • Glassware including Separating Funnel • PE Weighing Bottle with screwed cap • Water Bath • Whatman No. 42 Filter Paper • Cotton
5.	Arsenic (as As) (Table 1, Clause 3.2, Sr. no. v)	• Glassware • Standard Arsenic Solutions corresponding to 0 µg, 5 µg, 10 µg, 15 µg, 20 µg and 25 µg of arsenic • hydrochloric acid • potassium iodide • stannous chloride solution • Timer • impregnated absorbent cotton wool

		• silver diethyldithiocarbamate solution • zinc granules • Evolution and Absorption Apparatus • Spectrophotometer or Photoelectric Absorptiometer
6.	Iron (Fe) (Table 1, Clause 3.2, Sr. no. vi)	• Photo-Electric Absorptiometer • Hydrochloric Acid • Hydroxyl Ammonium Chloride Solution • Phenanthroline Hydrochloride Solution • Buffer Solution • Standard Iron Solution • Platinum Dish • pH Meter with Glass Electrode • Glassware • Weighing Balance • PE Bottle with screwable cap • Dropper • Water Bath
7.	Potassium (as K) (Table 1, Clause 3.2, Sr. no. vii)	• Potassium Chloride Powder • Standard Potassium Solution • Platinum Dish • Flame Photometer with a Filter for Potassium • Water Bath • Weighing Balance • Glassware • PE Bottle with screwable cap • Galvanometer
8.	Sodium (as Na) (Table 1, Clause 3.2, Sr. no. viii)	• Flame Photometer with a Filter for Sodium • Galvanometer • Platinum Dish • Sodium Chloride Powder • Standard Sodium Solution • PE Bottle with screwable cap • Glassware • Weighing Balance • Water Bath
9.	Calcium (as Ca) (Table 1, Clause 3.2, Sr. no. ix)	• Platinum Dish • Flame Photometer with a Calcium Filter • PE Bottle with screwable cap • Weighing Balance • Glassware • Hydrochloric Acid • Hot Plate • Water Bath • Galvanometer • Standard Calcium Solution • Weighing Balance
10.	Chloride (as Cl) (Table 1, Clause 3.2, Sr.	• Photo-Electric Colorimeter • Ferric Ammonium Sulphate Solution

	no. x)	• Mercury Thiocyanate • Standard Chloride Solution • Platinum Dish • PE Bottle with screwed cap • Water Bath • Calcium Carbonate Powder • Filter Paper • Weighing Balance • Glassware • Timer
11.	Phosphate (as PO_4) (Table 1, Clause 3.2, Sr. no. xi)	• Photo-Electric Colorimeter • Perchloric Acid • Ammonium Molybdate Solution • Reducing Solution • Standard Phosphate Solution • Platinum Dish • Water Bath • PE Bottle • PE Bottle with screwable cap • Weighing Balance • Glassware
12.	Sulphite (as SO_3) (Table 1, Clause 3.2, Sr. no. xii)	• Iodine Solution • Sodium Thiosulphate Standard Solution • Starch Indicator Solution • PE Weighing Bottle with screw cap • PE Beaker • Glassware • Weighing Balance
13.	Sulphate (as H_2SO_4) (Table 1, Clause 3.2, Sr. no. xiii)	• Photoelectric Colorimeter • Sodium Chloride Acidified Solution • Barium Chloride Crystals • Glycerol- Alcohol Solution • Standard Sulphate Solution • Weighing Balance • PE Bottle with screwed cap • Platinum Dish • Water Bath • Whatman No. 1 Filter Paper

The above list is indicative only and may not be treated as exhaustive.

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 equipment.
- 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 incorporated legibly and indelibly on each type of packing/container and on the Label/Test Certificate / Certificate of Analysis supplied along with Bulk Container (as applicable), provided always that the material so marked, conform to every requirement of the specification.

3.1. Packing and marking (including CAUTIONARY DISPLAY) shall be done as per the provision of the Indian Standard. In addition, the following details shall be mentioned on each container legibly and indelibly:
 - a) BIS Licence No. CM/L.....
 - b) 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, each Grade and Sub Grade of hydrofluoric acid, aqueous produced in a continuous run in a day 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.
- 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)

(1)				(2)	(3)		
Test Details				Test equipment: R required or S Sub- Contracting permitted	Levels of Control		
Clause	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3	Description	3	IS 10332	R	One	Each control unit	-
3, Table 1, Sl. No. i)	Total acidity	A-2	IS 10332	R	One	Each control unit	-
3, Table 1, Sl. No. ii)	Residue on ignition	A-3	IS 10332	R	One	Each control unit	-
3, Table 1, Sl. No. iii)	Hydrofluosilicic acid (as H ₂ SiF ₆)	A-4 or A-15	IS 10332	R	One	Each control unit	-
3, Table 1, Sl. No. iv)	Heavy metals (as Pb)	A-5	IS 10332	R	One	Each control unit	Applicable only for AR/EL grade
3, Table 1, Sl. No. v)	Arsenic (as As)	A-6	IS 10332	R	One	Each control unit	Applicable only for AR/EL grade
3, Table 1, Sl. No. vi)	Iron (Fe)	A-7	IS 10332	R	One	Each control unit	Applicable only for AR/EL grade
3, Table 1, Sl. No. vii)	Potassium (as K)	A-8	IS 10332	R	One	Each control unit	Applicable only for EL grade

3, Table 1, Sl. No. viii)	Sodium (as Na)	A-9	IS 10332	R	One	Each control unit	Applicable only for EL grade
3, Table 1, Sl. No. ix)	Calcium (as Ca)	A-10	IS 10332	R	One	Each control unit	Applicable only for EL grade
3, Table 1, Sl. No. x)	Chloride (as Cl)	A-11	IS 10332	R	One	Each control unit	Applicable only for AR/EL grade
3, Table 1, Sl. No. xi)	Phosphate (as PO ₄)	A-12	IS 10332	R	One	Each control unit	Applicable only for AR/EL grade
3, Table 1, Sl. No. xii)	Sulphite (as SO ₃)	A-13	IS 10332	R	One	Each control unit	Applicable only for AR/EL grade
3, Table 1, Sl. No. xiii)	Sulphate (as H ₂ SO ₄)	A-14	IS 10332	R	One	Each control unit	-

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification.