



**PRODUCT MANUAL
FOR ALUMINO-FERRIC
ACCORDING TO IS 299:2012**

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 299:2012
	Title	:	ALUMINO-FERRIC - SPECIFICATION
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	NA (Sample of each grade shall be drawn and tested)
c)	Sample Size	:	500 g
3.	List of Test Equipment	:	Please refer Annex –A
4.	Scheme of Inspection and Testing	:	Please refer Annex - B
5.	Possible tests in a day :		All tests
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 299:2012 with the following scope:		
	Name of the product	Alumino-Ferric	
	Grade	1. Grade 1 and 2 in solid form; 2. Grade 3 in liquid form; 3. Grade 4 in solid form for treatment of water intended for drinking; and 4. Grade 5 in liquid form for treatment of water intended for drinking.	

ANNEX-A
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LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sr. No.	Test Equipment	Tests used in with Clause Reference
1	Analytical Balance, Filter Paper, Glass Crucible, Oven	cl.4.2.i, Insoluble Matter
2	Analytical Balance, Stoppered Bottle, Spectrophotometer, Nessler Cylinder, Pipette	cl.4.2.ii, Soluble iron compound (as Fe)
3	Analytical Balance, Volumetric flask, Beaker, Water Bath, Hot Plate, pH Meter, Conical flask, Pipette	cl.4.2.iii, Water soluble aluminium compounds (as Al ₂ O ₃)
4	Analytical Balance, pH meter	cl.4.2.iv, Ph
5	Analytical Balance, Beaker, Nessler Cylinder	cl.4.2.v, Free acidity (As H ₂ SO ₄), Basicity (as Al ₂ O ₃)
6	Analytical Balance, Nessler Cylinder, Volumetric flask,	cl.4.2.vi, Lead(as pb)
7	Analytical Balance, Beaker, Pipette, Spectrophotometer	cl. 4.2.vii, Arsenic(as As ₂ O ₃)
8	Analytical Balance, Spectrophotometer, Beaker, Hot Plate	cl.4.2.viii, Mercury(as Hg)
9	Analytical Balance, Nessler Cylinder, Beaker, Spectrophotometer, Volumetric flask	cl.4.2.ix, Manganese (as Mn)
10	Analytical Balance, Volumetric flask, Pipette, Crucible	cl. 4.2.x, Chromium(as Cr)
11	Spectrophotometer	cl.4.2.xi, Cadmium(as Cd)
12	Spectrophotometer	cl.4.2.xii, Selenium(as Se)
13	Analytical Balance, Spectrophotometer, Separating funnel, pH meter, Volumetric flask	cl.4.2.xiii(a), Phenolic compounds (as C ₆ H ₅ OH)
14	Analytical Balance, Volumetric flask, Hot Plate, Separating funnel	cl.4.2.xiii(b), Anionic detergents

The list above is indicative and may not be taken as exhaustive

ANNEX – B

**SCHEME OF INSPECTION AND TESTING
FOR ALUMINO-FERRIC
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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 license shall be stencilled on each package of alumino ferric or printed on the labels applied to the package or printed on the card/test certificate accompanying the package. If the material is supplied in bulk, it shall be accompanied by a card/test certificate bearing all the information as given in marking clause of the Indian Standard and the results of the testing of the lot/C.U. as per the Indian Standard, provided always that the product thus marked and packed conforms to all the requirement of the specification.
 - 3.1 Marking and packing shall be done as per the provisions of the Indian Standard. In addition In addition, the following details shall be mentioned on each container/package:
 - 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, a batch or control unit shall constitute all the finished material produced at one time from a particular charge of raw material.
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 Standard 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
(Scheme of Inspection and Testing)**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required(or) S:Sub contracting permitted	Recommended Levels of Control		
Cl.	Requirement	Test Methods	Clause Reference		No. of Sample	Frequency	Remark
4.1	Description	4.1	IS 299:2012	R	one	Each Batch	
4.2i	Insoluble Matter	A-3	-do-	R	One Composite Sample (see Note 3)	Three Consecutive Batches	
4.2 ii	Soluble iron compound (as Fe)	A-4	-do-	R	-do-	-do-	
4.2 iii	Water-soluble aluminium compounds (as Al ₂ O ₃)	A-5	-do-	R	One	Each Batch	
4.2 iv	pH (of 5 percent aqueous solution)	A-6	-do-	R	-do-	-do-	
4.2 v	Free Acidity (As H ₂ SO ₄)/ Basicity (As Al ₂ O ₃)	A-7	-do-	R	One Composite Sample (see Note 3)	Three Consecutive Batches	
4.2 vi	Lead(as Pb)	A-8	-do-	R	-do-	-do-	Applicable for Grade 4 and 5 only

4.2 vii	Arsenic (as As ₂ O ₃)	A-9	-do-	R	-do-	-do-	-do-
4.2 viii	Mercury (as Hg), Parts per million	A-10	-do-	S	One	Once in a month	-do-
4.2 ix	Manganese (as Mn), parts per million	A-11	-do-	R	One Composite Sample (see Note 3)	Three Consecutive Batches	-do-
4.2 x	Chromium (asCr), Parts per million	A-12	-do-	R	-do-	-do-	-do-
4.2 xi	Cadmium (as Cd), parts per million	A-13	-do-	S	One	Once in a month	-do-
4.2 xii	Selenium (as Se), parts per million	A-14	-do-	S	-do-	-do-	-do-
4.2 xiii	Organic impurities						
	(a) Phenolic compounds (as C ₆ H ₅ OH), parts per million	A-15	-do-	R	One Composite Sample (see Note 3)	Three Consecutive Batches	-do-
	(b) Anionic detergents (as MBAS), parts per million	A-16	-do-	R	-do-	-do-	-do-

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. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

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 for approval to BO head.

Note-3: A composite sample shall be prepared by mixing equal quantity of material from three consecutive batches.