



उत्पाद मैनुअल
अग्निशमन के लिए शुष्क रासायनिक पाउडर - बीसी, एबीसी और डी टाइप के लिए
आई एस 4308:2019 के अनुसार

PRODUCT MANUAL
DRY CHEMICAL POWDERS FOR FIRE FIGHTING – BC, ABC AND D TYPES
ACCORDING TO IS 4308:2019

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 4308 : 2019
	शीर्षक Title	:	Dry Chemical Powders for Fire Fighting – BC, ABC and D Types
	संशोधनों की संख्या No. of amendments	:	1
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Nil
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Separate samples of Dry Chemical Powder of each type (BC/ ABC/ D) shall be tested for GoL/CSoL.
c)	नमूने का परिमाण Sample Quantity	:	5 kg for all tests 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)
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		
	(i) Main chemical constituent, (ii) Minimum main chemical constituent, (iii) Apparent density, (iv) Particle size/sieve analysis, (v) Water repellency, (vi) Rate of flow & (vi) Colour 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.		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 4308 : 2019 with the following scope:		
	Name of the product	Dry Chemical Powders for Fire Fighting – BC, ABC And D Types	
	Type	BC type/ ABC type/ D Type	

भारतीय मानक ब्यूरो
 BUREAU OF INDIAN STANDARDS
 मानक भवन, ९, बहादुर शाह ज़फ़र मार्ग
 Manak Bhawan, 9, Bahadur Shah Zafar Marg
 नई दिल्ली- ११०००२
 New Delhi – 110002

ANNEX A

List of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

S. No.	Tests used in with Clause Reference	Test Equipment
1	Determination of Main chemical constituent and Minimum main chemical constituent [Clause 5, Table 1, Sl No (i) & (ii)]	- Analytical balance - Aluminium dishes - Glass desiccator - Oven - Sodium bicarbonate /Potassium bicarbonate - Centrifuge tubes - Centrifuge machine - Steam bath - pH meter - Burette - Absolute /denatured ethanol - Ethanol - Sodium hydroxide - Melting point determination apparatus
2	Apparent density [Clause 5, Table 1, Sl No (iii)]	- Weighing balance - Graduated measuring cylinder - Stop watch
3	Particle size / sieve analysis [Clause 5, Table 1, Sl No (iv)]	- Sieves of 100, 200 and 320 mesh with sieve shaker - Weighing balance - Stop watch
4	Hygroscopicity [Clause 5, Table 1, Sl No (v)]	- Weighing balance - Temperature and humidity control cabinet
5	Water repellency [Clause 5, Table 1, Sl No (vi)]	- Weighing balance - Beaker - Measuring cylinder - Air conditioner - Thermometer - Oven - Desiccator
6	Moisture content [Clause 5, Table 1, Sl No (vii)]	- Weighing balance - Petri dish

		- Desiccator - Sulphuric acid - Air conditioner - Thermometer
7	Rate of flow [Clause 5, Table 1, Sl No (viii)]	- Erlenmeyer glass conical flasks - Weighing balance - SS disc - Rubber tube and collar - Stand
8	Foam compatibility [Clause 5, Table 1, Sl No (ix)]	- Circular fire tray of brass/steel - Burn – back pot of brass/steel - Foam making nozzle as per fig 3 of IS 4308 - Fuel as per clause H-2.4 of IS 4308 - Air conditioner - Stop watch
9	Fire test [Clause 5, Table 1, Sl No (x)]	- To be done in BIS recognized laboratory
10	Temperature resistance test [Clause 5, Table 1, Sl No (xi)]	- Weighing balance - Fire extinguisher conforming to IS 15683 - Oven - Deep freezer - Air conditioner - Stop watch

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is :
Dry chemical powder of each type manufactured in a single charge material in the manufacturing process and under the same environmental conditions shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the

utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated indelibly and legibly on each bag/container of dry chemical powder provided always that the product so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The product shall also be marked with the following additional requirement on the bag/container of dry chemical powder:

a) “For BIS certification details please visit www.bis.gov.in”

4. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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**(ONLY FOR GUIDANCE PURPOSE)**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
5, Table 1	REQUIREMENTS						
(i)	Main chemical constituent	5 Annex-A	IS 4308	R	one	Each control unit	-
(ii)	Minimum main chemical constituent	5 Annex-A	IS 4308	R	one	Each control unit	-
(iii)	Apparent density	5 Annex-B	IS 4308	R	one	Each control unit	-
(iv)	Particle size / sieve analysis	5 Annex-C	IS 4308	R	one	Each control unit	-
(v)	Hygroscopicity	5 Annex-D	IS 4308	S	one	Once in two month for each type of dry chemical powder	-
(vi)	Water repellency	5 Annex-E	IS 4308	S	one		
(vii)	Moisture content	5 Annex-F	IS 4308	S	one		
(viii)	Rate of flow	5 Annex-G	IS 4308	R	one	Each control unit	-
(ix)	Foam compatibility	5 Annex-H	IS 4308	S	one	Once in two month for each type of dry chemical powder	Required if declared by the manufacturer
(x)	Fire test	5 Annex-J	IS 4308	S	one	Once in year for each type of dry chemical powder	
(xi)	Temperature resistance test	5 Annex-K	IS 4308	R	one	Once in two month for each type of dry chemical powder	-
(xii)	Colour	5	IS 4308	R	Firm to have adequate in-process controls to check compliance of this parameter. However, appropriate records shall be maintained by the manufacturer for evidence of conformity.		