PRODUCT MANUAL FOR
ALUMINIUM PHOSPHIDE FORMULATIONS
ACCORING TO IS 6438 : 1980

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 6438 : 1980
	Title	:	Aluminium Phosphide formulations
	No. of amendments	:	03
2.	**Sampling Guidelines:**		
a)	**Raw material**	**:**	No specific requirements
b)	**Grouping Guidelines**	**:**	NA (No varieties mentioned for the product in IS)
c)	**Sample Size**	**:**	One tin (In original sealed container of 200 gms to 1000 gms)
3.	**List of Test Equipment**	**:**	Please refer Annex – A
4.	**Scheme of Inspection and Testing**	**:**	Latest SIT is attached at Annexure
5.	**Possible tests in a day:**		
	i. Description ii. Aluminium Phosphide content iii. Evolution of phosphine gas		
6.	**Scope of the License:**		
	Licence shall be granted with the following scope as per IS 6438:1980 with the following scope.		
	Name of the product	Aluminium Phosphide formulations	

ANNEX –A

TO PRODUCT MANUAL
ALUMINIUM PHOSPHIDE FORMULATIONS
ACCORING TO IS 6438 : 1980

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.	Aluminium Phosphide Content **Cl** 2.3.1 Appendix A, IS 6438	Assembly of apparatus for determination of Aluminium Phosphide as per Fig 1 of IS 6438, Water bath (Range : Ambient to Ambient to 110 ^{0}C, LC 1^{0}C), Analytical balance (Range: 0 to 200gms LC 0.001gms), Hot plate (Ambient to 100^{0}C, LC 1^{0}C). Standard Potassium permanganate solution approx 0.5N Dilute Sulphuric Acid-10 Percent (m/v) and 1:1 (v/v) Standard Oxalic Acid Solution approx 0.5N Nitrogen Gas or Carbon dioxide Gas-From a cylinder with regulator for easy flow of gas. Reaction flask with interchangeable socket-250 ml, Separating Funnel, Absorption bottles-200/250ml capacity. Burette-50ml, LC 0.1ml, measuring cylinder, beaker
2.	**Evolution of phosphine gas** **Cl 2.3.2** **Appendix B, IS 6438**	Humidified Chamber consisting of Glass Desiccator of diameter of not less than 30cm Saturated with water vapour at room temperature, Silica gel. Watch glass

List above is indicative only and may not be taken as exhaustive.

ANNEX - B

SCHEME OF INSPECTION AND TESTING ALUMINIUM PHOSPHIDE FORMULATIONS ACCORING TO IS 6438 : 1980

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.

1.2 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 stencilled/printed on each container of aluminium phosphide formulations or printed on the labels applied to the container as the case may be, provided always that the material in each container to which this mark is thus applied, conform to every requirement of the specification.

3.1 The material shall be packed according to the requirements given in IS 8190 (Part 4). Packing and marking 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, the entire quantity of the material manufactured 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.

5.1 All the production which conforms to the Indian Standards and covered by the licence shall 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

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods Clause Reference	Test method IS		No. of Sample	Frequency	Remarks
2.2.1	Description of material	2.2.1	IS 6438	R	Six Samples	Drawn at equal intervals from each control unit manufactured	
2.3.1	Aluminium phosphide content	2.3.1 & Appendix A	-do-	R	-do-	-do-	
2.3.2	Evolution of Phosphide gas	2.3.2 & Appendix B	-do-	R	-do-	-do-	

Note-1: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control and submit his own levels of control in column 3 with proper justification for approval by BO Head.

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 empaneled by the Bureau.