PRODUCT MANUAL
FOR PHOSPHATE SOLUBILISING BACTERIAL INOCULANT (PSBI)
ACCORDING TO IS 14807 : 2000

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 14807 : 2000
	Title	:	Phosphate Solubilising Bacterial Inoculant (PSBI)
	No. of Amendments	:	02
2.	**Sampling Guidelines:**		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	NA
c)	Sample Size	:	500 g
3.	**List of Test Equipment**	:	ANNEX - A
4.	**Scheme of Inspection and Testing**	:	ANNEX - B
5.	**Possible tests in a day :**		
	i. Viable Cells ii. Fineness of Carrier iii. Contaminants iv. pH v. Solubilizing zone		
6.	**Scope of the Licence :**		
	Licence is granted to use Standard Mark as per IS 14807 : 2000 with the following scope:		
	Name of the product	Phosphate Solubilising Bacterial Inoculant (PSBI)	

ANNEX-A
TO PRODUCT MANUAL
FOR PHOSPHATE SOLUBILISING BACTERIAL INOCULANT (PSBI)
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LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sl No.	Tests used in with Clause Reference	Test Equipment
1	Viable Cells/g and Contaminants Cl 4.1 (Annex A of IS 14807)	Pipettes Graduated, 1 ml and 10 ml, Conical Flasks, 150 ml and 250 ml capacity, Screw capped tubes of 10ml capacity, Incubator (capable of operating at 28 ± 2°C, Petri Dishes, Hot Air Oven, Autoclave, pH meter, reagents (culture media), Phosphate Solubilising Bacterial Inoculant, Sterile water, Reciprocal shaker.
2	Fineness of Carrier Cl 4.2	Analytical balance, Calcium carbonate, Sieve of size 150 to 212 or (72 to 100 mesh) IS sieve, Autoclave for sterilization.
3	pH Cl 4.4 (Annex B of IS 8268)	Phosphate Solubilising Bacterial Inoculant, Analytical balance, Rotary shaker, Conical Flasks, 100 ml capacity pH meter, Distilled water.
4	Solubilizing Zone Cl 4.5 (Annex C of IS 14807)	Spectrophotometer capable of transmission measurements at 840 to 880 nm, Rotary shaker Conical Flasks, 100 ml capacity, Volumetric flask 50 ml capacity, Ammonium Molybdate, L-Ascorbic Acid, p-Nitrophenol, $4NH_2SO_4$, Culture media, Sulphomolybdic Acid, Glass bottle, Analytical balance, Whatman filter paper No. 40, Darco-60 (activated phosphorus free carbon).

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

ANNEX – B

SCHEME OF INSPECTION AND TESTING FOR PHOSPHATE SOLUBILISING BACTERIAL INOCULANT (PSBI) ACCORDING TO IS 14807 : 2000

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, STORAGE AND MARKING – The Standard Mark as given in Schedule of the licence shall be stenciled/printed on each packet of Phosphate Solubilising Bacterial Inoculant (PSBI) or printed on the labels applied to the container, as the case may be, provided always that the material in each packet to which this mark is thus applied conforms to every requirement of the specification.

3.1 **Marking** – Marking shall be done as per clause 6 of IS 14807. 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".

3.2 **Packing** – The material shall be packed in packaging material of low density polyethylene/polypropylene packs, thickness of which shall not be less than 100 (micron). One sample from each consignment of the packaging material shall be tested for its conformity to clause 5 of IS 14807.

3.2 DIRECTION FOR USE – Direction for use of Phosphate Slubilizing Bacterial Inoculants, as given in Annex E of IS 14807 shall be printed briefly on the packet. A separate pamphlet may preferably be given with it.

3.3 STORAGE - Phosphate Solubilising Bacterial Inoculants shall be stored by the manufacturer in a cool and dry place away from direct heat preferably at a temperature of 200C, and not exceeding 30oC. It shall also be the duty of the manufacturer to instruct the retailers and, in turn, the users about the precautions to be taken during storage.

4. CONTROL UNIT – For the purpose of this scheme, the quantity of material blended in a blender and taken from the same consignment of raw material at one time 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.

5.2 On the basis of tests and analysis results, the decision regarding conformity or otherwise of a control unit shall be taken as follows:

5.2.1 A representative sample shall be taken from each control unit and tested for all the requirements given in Table 1 of SIT except carrier fineness.

5.2.2 A sample shall be tested from each consignment of carrier material received for carrier fineness as given in Table 1 of SIT.

6. RAW MATERIAL – Routine analysis of each consignment of carrier material received in the factory shall be carried out. Carrier should be neutralized with calcium carbonate and sterilized. Proper records should be maintained for neutralization and sterilization.

6.1 Specific mother culture be obtained from any recognized institution maintaining the mother culture. The manufacturer may control the quality of the broth as given in Annex D, it should get verified at least by two institutions as mentioned in note under clause 4.6 of IS 14807.

7. 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 Results				**Test equipment requirement R:required (or) S: Sub-contracting permitted**	**Levels of Control**		
Clause	**Requirements**	**Test Method Cl. Ref.**	**Test Method IS**		**No. of Samples**	**Frequency**	**Remarks**
4.1	Viable Cells/g	Annex A	IS 14807	R	One	Each control unit	
4.2	Fineness of Carrier	4.2	-do-	R	One	Each consignment of the carrier material received.	Ref. Clause 5.2.2 of SIT
4.3	Contaminants	Annex A	-do-	R	One	Each control unit	
4.4	pH	Annex B	IS 8268	R	One	-do-	
4.5	Solubilizing Zone	Annex C	IS 14807	R	One	-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 by BO Head.