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उत्पाद मानुयल
EMULSIFIABLE LARVICIDAL OIL, PYRETHRUM
BASED

IS 6014 : 1978 के अनुसार

PRODUCT MANUAL
FOR EMULSIFIABLE LARVICIDAL OIL, PYRETHRUM BASED
ACCORDING TO IS 6014 : 1978

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन में रीति और पारदर्शिता के सुसंगत सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेंस धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेंस/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

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.	उत्पाद Product	:	IS : 6014:1978
	शीर्षक Title	:	Specification for Emulsifiable Larvicidal Oil, Pyrethrum Based
	संशोधन संख्या No. of amendments	:	05
2.	नमुनाकरण दिशा निर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Pyrethrum Extracts employed in the formulation of this material shall conform to IS 1051. (Supplier's TC may be accepted/ ISI marked material may be accepted)
b)	समूहिकरण दिशा निर्देश Grouping Guidelines	:	Not applicable

c)	नमूने का परिमाण Sample Size	:	1000 ml
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	कृपया Annex-A देखें Please refer Annex – A
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	कृपया Annex-B देखें Please refer Annex - B
5.	एक दिन में संभावित परीक्षण Possible tests in a day:		
	i. Description ii. Identity test iii. Flash point iv. Emulsion Stability v. Relative density		
6.	लाइसेंस का कार्यक्षेत्र /Scope of the License :		
	IS 6014 : 1978 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है License is granted to use Standard Mark as per IS 6014 : 1978 with the following scope:		
	उत्पाद का नाम Name of the product	Emulsifiable Larvicidal Oil, Pyrethrum Based (----% total pyrethrin content)	

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New Delhi – 110002

ANNEX – A

TO PRODUCT MANUAL FOR EMULSIFIABLE LARVICIDAL OIL, PYRETHRUM BASED ACCORDING TO IS 6014 : 1978

LIST OF TEST EQUIPMENT

Major test equipments required to test as per the Indian Standard

Sr. No.	Tests used in with Clause Reference	Test Equipment
1.	Identity Test Clause 2.2.1.1 (Appendix A of IS 1051)	a) TLC plates coated with 0.38 mm thick layer of Silica Gel HF 254. b) Applicator- Standard c) Pipettes 5 micro litres d) Hair drier or any other arrangement to provide hot air. e) Developing tank of suitable size and covered on the inside with filter paper. The tank is to be provided with a lid to prevent loss of solvent by evaporation. f) Iodine staining jar—Glass. g) TLC spotting guide—Standard. Reagents: a) Developing solvents- Benzene : Ethyl acetate (95:5 v/v) b) Iodine --- Crystals c) Methyl Alcohol d) Standard Pyrethrum oleoresin—of known pyrethrin content. e) Petroleum Ether (40 – 60 degrees) bp f) Synthetic pyrethroid.
2.	Flash Point (Abel)	a) Cleaning solvent b) Coolant, Lubricant

	Clause 2.2.2 {IS 1448 (Part 20)}	c) Verification Liquids d) Ignitor and pilot light gas e) Flash point apparatus/Abel flash point apparatus consisting of test cup, cover assembly, heating vessel, heating device, flash detector, Stirrer, Thermometers 2 (one for the oil cup of range; -35°C to +70°C, and another for the water bath of the range; -30°C to +80°C, other specifications of thermometer as per Table C.1 of IS 1448 (Part 20). f) Timing device g) Barometer h) External cooling bath i) Test cup thermal insulating cap j) Abel flash point apparatus provided with a stirrer & Thermometer k) Heating Vessel or bath, Ethylene Glycol.
3.	Emulsion Stability Clause 2.2.3 (Appendix A of IS 6014)	Method A: - Beaker of capacity 250 ml with an internal diameter of 6.0 to 6.5 and marked at 100 ml. - Graduated flask 100 ml. - Graduated flask 1 L. - Mohr type pipette - Glass rods- 4 to 6 mm in diameter and of convenient length. - Graduated cylinder of capacity 100 ml Following reagent/chemicals is also required: - Calcium Carbonate - Magnesium oxide - Dilute hydrochloric acid. - Standard hard water. Method B: - Stoppered cylinder - Standard hard water - Shaker - Stop watch
4.	Relative Density Clause 2.2.4. {IS 1448 (Part 32)}	Capillary-stoppered pycnometer Method: a) Warden form Pycnometer/Gay-Lussac type Pycnometer/Wide mouth Pycnometer (conforming to ISO 3507) Graduated bicapillary pycnometer Method: a) Pycnometer capacity 1ml to 10 ml conforming to dimensions as per Fig 2 of IS 1448 (Part 32), total weight not exceeding 30 g. (Any bicapillary pycnometer conforming to these requirements may be used). Other apparatus for both methods:

		a) Constant temperature bath (water bath having minimum depth of 300 mm, capable of maintaining within +/- 0.05 deg Celsius of desired temperature. b) Bath thermometer (as per Cl 5.3 of IS 1448 (Part32) having suitable range and an accuracy of 0.05 deg Celsius or above. c) Pyknometer holder (optional) as per Fig 3 of IS 1448 Part 32. d) Balance of suitable range with LC of 0.1 mg.
5.	Total Pyrethrin Content Clause 2.3.1 (Appendix B of IS 1051)	For both Monocarboxylic acid form (Pyrethrin I) and Dicarboxylic acid form (Pyrethrin II): i) Deniges Reagents (to be prepared from mercuric oxide, sulphuric acid, distilled water) ii) Iodine Monochloride Solution (to be prepared from potassium iodide, potassium iodate, dilute hydrochloric acid and chloroform) iii) Potassium iodate Sodium hydroxide Absolute Ethyl alcohol or rectified spirit Petroleum Ether Ethyl Ether – peroxide free. iv) Filter Cell – Filtering aid available commercially in the form of powder to facilitate filtration v) Barium Chloride vi) Dilute Sulphuric Acid vii) Dilute Hydrochloric Acid viii) Sodium Chloride mer ix) Chloroform x) Phenolphthalein Indicator xi) Gooch crucible, xii) Water bath xiii) Reflux condenser with assembly xiv) Buchner funnel xv) Glass stoppered Separating funnel, 500ml Glass stoppered Separating funnel xvi) 250ml Conical Flasks 250 to 300 ml capacity xvii) Burette with titration assembly of range 0-50ml and least count = 0.1ml xviii) Analytical Balance of least count = 0.0001g, xix) Standard Pyrethrum xx)Mercurous sulphate xxi) Potassium iodate xxii) Standard sodium hydroxide

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

ANNEX - B

SCHEME OF INSPECTION AND TESTING FOR EMULSIFIABLE LARVICIDAL OIL, PYRETHRUM BASED ACCORDING TO IS 6014 : 1978

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 equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. PACKAGING, LABELLING AND MARKING – The Standard Mark, as given in the Schedule of the licence shall be stencilled/printed on each container of Emulsifiable larvicidal oil, pyrethrum based, or printed on the label applied to the container, as the case may be, provided always that the material in each container to which the mark is thus applied conforms to every requirement of the specification.

3.1 Each container of Emulsifiable larvicidal oil, pyrethrum based shall bear legibly and indelibly the information given below:

- a) Name of the material;
- b) Name of the manufacturer;
- c) Date of manufacture;
- d) Batch number;
- e) Net mass of contents;
- f) Nominal total pyrethrin content;
- g) Minimum cautionary notice as worded in Insecticides Act and Rules
- h) Licence number (CM/L-----)
- J) BIS website details i.e. – “For details of BIS certification please visit www.bis.gov.in”.

3.2 PACKING- The material shall be packed according to the requirements given in IS 8190 (Part 2).

4. CONTROL UNIT – For the purpose of this scheme, the entire quantity of material processed in a mixer in one operation at a 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 shall be marked with Standard Mark.

6. RAW MATERIAL – Pyrethrum extracts employed in the formulation of Emulsifiable Larvicidal Oil, Pyrethrum Based shall conform to IS 1051. A sample from each consignment of the material received shall be tested for its conformity to IS 1051 and records maintained. Alternatively, each consignment shall be covered by test certificate from the supplier guaranteeing its conformity to IS 1051. However, no testing or test certificate may be required if the material is ISI marked.

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 and the Insecticide Act 1968.

TABLE 1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Recommended Levels of Control		
Cl.	Requirement	Test Method Cl. Ref.	Test Method IS		No. of Sample	Frequency	Remarks
2.1.1	Pyrethrum Extracts		IS 1051	S	One	Each consignment received	Supplier's test certificate may be obtained/ISI marked material may be accepted without TC.
2.2.1.1	Description	2.2.1.1	IS 6014	R	One	Each Control Unit	
2.2.1.2	Identity Test	Appendix A	IS 1051	R	One	Each Control Unit	
2.2.2	Flash Point	-	IS 1448 (Part 20)	R	One	Each Control Unit	
2.2.3	Emulsion Stability	Appendix A	IS 6014	R	One	Each Control Unit	
2.2.4	Relative Density	-	IS 1448 (Part 32)	R	One	Each Control Unit	
2.2.5	Spreading pressure	Appendix B	IS 588*		One	Each Control Unit	*See Note 3

				R			
2.3.1	Total Pyrethrin Content	Appendix B	IS 1051	R	One	Each Control Unit	
2.4	Larvicidal efficacy	Appendix B	IS 6014	R	Two	Each control unit	Optional requirement

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 empanelled 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.

*Note-3: IS 588:1978 has been withdrawn and BIS Food and Agriculture Department (FAD) is in process of defining another test method for this requirement of spreading pressure. Till the time a new test method is defined in the IS 6014 for spreading pressure test, method as given in Appendix B of IS 588:1978 shall be followed.