



**PRODUCT MANUAL
FOR PYRETHRUM EXTRACTS
ACCORDING TO IS 1051 : 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 1051 : 1980
	Title	:	Pyrethrum Extracts
	No. of Amendments	:	7
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	NA (No varieties of the product mentioned in IS)
c)	Sample Size	:	1 Litre of sample
3.	List of Test Equipment	:	Please see Annex – A
4.	Scheme of Inspection and Testing	:	Please see Annex – B
5.	Possible tests in a day :		
	a) Identification test (CI 2.1.2) b) Colour and Odour (CI 2.2) c) Flash Point (CI 2.3) d) Saponification Value (CI 2.5)		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 1051 : 1980 with the following scope:		
	Name of the product	Pyrethrum Extracts	

**ANNEX – A
TO PRODUCT MANUAL
FOR PYRETHRUM EXTRACTS
ACCORDING TO IS 1051 : 1980**

LIST OF TEST EQUIPMENT

Major test equipment required to test as the Indian Standard

S. No.	Test Equipment	Tests used in with Clause Reference
1	TLC Plates Standard Applicator Micropipette with mark of 5µL Hair dryer or any other arrangements for hot air Chromatography development tank Iodine staining jar TLC spotting guide Silica Gel HF 254 Benzene Ethyl Acetate Iodine crystals Methyl Alcohol Standard Pyrethrum Oleoresin Petroleum Ether (40° to 60°C) Standard Allethrin or any other synthetic pyrethroid, Standard Pyrethrum Oleoresin	Identity Test for Pyrethrins, Cl 2.1.2 and Appendix A of IS 1051
2	UV-Visible Spectrophotometer suitable for measuring at wavelength of 435 nm and having a band width of 2 nm. Volumetric Flask, 20 ml capacity Measuring cylinder Duplicate cuvettes Mineral turpentine of known purity, Analytical Balance of least count of 0.0001g	Colour, Cl 2.2 and Appendix D of IS 1051

<p>3</p>	<p>Abel flash point apparatus consisting of brass test cup, test cup cover assembly, stirrer, heating vessel and heating device. Low volatile aromatic Benzene free cleaning solvents Coolant Ignitor (low hydrocarbon gas with flame generator or electric ignitor) Certified reference standard nonane and cyclohexanone Thermometers of range and least count as follows: -30 to 70°C, LC = 0.5°C (it is for the sample cup and given the nature of the product the lower temperature in the range could start from 0°C also) -30 to 80°C, LC = 1°C (it is for the heating vessel and given the nature of the product this is not mandatory)</p>	<p>Flash Point, Cl 2.3 of IS 1051 and IS 1448 (P:20)</p>
<p>4.</p>	<p>Deniges Reagents (to be prepared from mercuric oxide, sulphuric acid, distilled water) Iodine Monochloride Solution (to be prepared from potassium iodide, potassium iodate, dilute hydrochloric acid and chloroform) Potassium iodate Sodium hydroxide Absolute Ethyl alcohol or rectified spirit Petroleum Ether Ethyl Ether – peroxide free. Filter Cell – Filtering aid available commercially in the form of powder to facilitate filtration Barium Chloride Dilute Sulphuric Acid Dilute Hydrochloric Acid Sodium Chloride Chloroform Phenolphthalein Indicator Gooch crucible, G3 or G4 Water bath Reflux condenser with assembly Buchner funnel Glass stoppered Separating funnel, 500ml Glass stoppered Separating funnel, 250ml Conical Flasks – 250 to 300 ml capacity Burette with titration assembly of range 0-50ml and least count = 0.1ml , Analytical Balance of least count = 0.0001g, Standard Pyrethrum Oleoresin</p>	<p>Total Pyrethrin Content, Cl 2.4 and Appendix B of IS 1051</p>

5.	<p>Reflux condenser with assembly with condenser tube at least 65cm long Water-Bath or Electric Hot-Plate with Rheostat Control Potassium Hydroxide Absolute Ethyl alcohol or rectified spirit Phenolphthalein Indicator Hydrochloric acid Distilled water, Analytical Balance of least count = 0.0001g</p>	<p>Saponification value, Cl 2.5 of IS 1051 and IS 548 (Part1)</p>
6.	<p>Apparatus consisting of a strong glass bottle fitted with brass pressure cap and needle valve. The apparatus shall be supported by a frame consisting of steel rods threaded at both ends and a cross bar made of brass. The assembly shall be tightened using screws and the bottom of the glass bottle shall be held by a circular brass frame of dia 102mm and thickness of 13mm. the frame shall have a depression, 5 mm deep and 70 mm in diameter, is made in the centre of the frame base to hold the bottom of the bottle in place. A rubber cushion shall be provided in the depression to hold the bottle properly. Please see figure 2 & 3 of IS 1051: 1980 for details. Hot air oven maintained at $105 \pm 2^{\circ}\text{C}$ Dichlorodifluoromethane Acetone Absolute Ethyl alcohol or rectified spirit. Sulphuric acid Chloroform Lamb's wool Desiccator, Analytical Balance of LC 0.0001g.</p>	<p>Optional requirement of matter insoluble in dichlorodifluoromethane, Cl 2.6 (only for the Material for Use as an Aerosol) and Appendix C of IS 1051</p>

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

ANNEX – B
SCHEME OF INSPECTION AND TESTING
FOR PYRETHRUM EXTRACTS
ACCORDING TO IS 1051 : 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.

1.1 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. PACKING AND MARKING–The Standard Mark, as given in the Schedule of the licence, shall be stenciled/printed on each container of Pyrethrum Extracts or printed on the label applied to it, 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 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) Any other information as is necessary under the Insecticides Act and Rules
- b) BIS Licence No. CM/L .
- c) 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 processed in a mixer in one operation 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.

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 Method Cl. Ref.	Test Method IS		No. of Sample	Frequency	Remarks
2.1.1	Description	2.1.1	IS 1051	R	One	Each control unit	
2.1.2	Identity	Appendix A	-do-	R	One	Each control unit	
2.2	Colour and Odour	Appendix D	-do-	R	One	Each control unit	
2.3	Flash Point	-	IS 1448 (Part 20)	R	One	Each control unit	
2.4	Total Pyrethrin content	Appendix B	IS 1051	R	One	Each control unit	
2.5	Saponification value	15	IS 548 (Part 1)	R	One	Each control unit	
2.6	Matter insoluble in dichlorodifluoromethane *	Appendix C	IS 1051	R	One	Each control unit	

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 of BO Head.

*Note-3: This is an additional requirement for the material for use as an aerosol and is to be tested only when declared by the purchaser.