



**PRODUCT MANUAL
FOR PENDIMETHALIN EC
ACCORDING TO IS 12751 : 1989**

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 12751 : 1989
	Title	:	Pesticides - Pendimethalin EC- Specification
	No. of Amendments	:	01
2.	Sampling Guidelines:		
a)	Raw material	:	Pendimethalin technical employed in the manufacture of Pendimethalin EC shall conform to IS 12685.
b)	Grouping guidelines	:	NA (No varieties for the product mentioned in IS)
c)	Sample Size	:	500 ml
3.	List of Test Equipment	:	Please refer ANNEX – <u>A</u>
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – <u>B</u>
5.	Possible tests in a day :		
	(i) Description (ii) Cold Test (iii) Flash Point (iv) Emulsion Stability (v) Acidity/Alkalinity (vi) Pendimethalin Content		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 12751: 1989 with the following scope:		
	Name of the product	:	Pendimethalin (30%) EC.

ANNEX - A
TO PRODUCT MANUAL
FOR PESTICIDES-PENDIMETHALIN EC
ACCORDING TO IS 12751 : 1989

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	Description (Cl. 3.2.1)	Glass Beaker, Tap water
2	Cold Test (Cl. 3.2.2)	Glass Container (100 ml)/Beaker with Cork/stopper fitted thermometer, stirrer, water bath, Ice-cold water
3	Flash Point (Cl. 3.2.3)	Cleaning solvent, Coolant, Lubricant, Verification Liquids, Ignitor and pilot light gas, 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), Timing device, Barometer, External cooling bath, Test cup thermal insulating cap, Abel flash point apparatus provided with a stirrer & thermometer, Heating Vessel or bath, Ethylene Glycol.
4	Emulsion Stability (Cl. 3.2.4)	Beaker (250 ml), Glass Rod (Dia-4 to 6 mm), Graduated Cylinder (100 ml), Mohr type pipette/ Separating funnel, Standard Hard Water, Air conditioner.
5	Pendimethalin Content (Cl. 3.3.1)	Gas Chromatographic Method; Gas liquid chromatograph, Pendimethalin of known purity as reference standard, Internal Standard p-terphenyl (p-diphenyl benzene), Acetone (Analytical reagent grade), Chloroform (Analytical reagent grade). Spectrophotometric Method; Spectrophotometer, Thin layer chromatography plates (200 mm × 200 mm) coated with Silica gel G, Lambda Pipette (500 µl), Centrifuge tubes stoppered,

		Developing Tank, Silica gel G Petroleum Ether, 30-60°C boiling point, Chloroform (Analytical reagent grade), Methyl Alcohol (Analytical reagent grade), Triethylamine (Analytical reagent grade), Pendimethalin of known purity as reference standard.
6	Acidity/Alkalinity (Cl. 3.4)	Buffer Solution (Acetic acid + Sodium hydroxide + demineralized water), Acetone, pH meter, Conical flask, Buchner funnel & Filter Flask, Sodium hydroxide - 0.05 N, Hydrochloric acid - 0.05 N.

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

ANNEX - B

**SCHEME OF INSPECTION AND TESTING
FOR PESTICIDES-PENDIMETHALIN EC
ACCORDING TO IS 12751 : 1989**

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 stencilled/printed on each container of Pendimethalin EC 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) 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 material formulated 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.

5.2 On the basis of the test results, decision regarding conformity or otherwise of the material to the requirements of the specification shall be made as follows:

5.2.1 A sample shall be drawn from the control unit and tested for all the requirements of the specification. If the sample fails in any of the requirements tested other than the pendimethalin content and emulsion stability, the entire control unit represented by the sample shall be considered unfit for the purpose of marking.

5.2.2 In case, the sample drawn from a control unit fails in the requirements of pendimethalin content and/or emulsion stability but passes in other requirements, the entire quantity of the material in the control unit may be suitably reprocessed and the defects rectified. Such reprocessed material when tested again shall satisfy all the requirements of the specification before it is marked.

6. RAW MATERIAL – Pendimethalin, technical employed in manufacture of Pendimethalin EC shall conform to IS 12685. A sample from each consignment of the material received, shall be tested for its conformity to IS 12685 and records maintained. Alternately, each consignment shall be covered by test certificate from the supplier guaranteeing its conformity to IS 12685.

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 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
3.2.1	Description	3.2.1	IS 12751	R	One	Each Control Unit	
3.2.2	Cold Test	13.1	IS 6940	R	One	-do-	
3.2.3	Flash Point	-	IS 1448 (Pt 20)	R	One	-do-	
3.2.4	Emulsion Stability	13.3	IS 6940	R	One	-do-	
3.3.1	Pendimethalin Content	Annex A	IS 12685	R	One	-do-	
3.4	Acidity/Alkalinity	13.5.4	IS 6940	R	One	-do-	

Note-1: 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-2: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Subcontracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.