



**PRODUCT MANUAL
FOR PESTICIDES - 2, 4-D SODIUM SALT, TECHNICAL
ACCORDING TO IS 1488 : 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 1488 : 1989
	Title	:	Pesticides- 2, 4-D Sodium Salt, Technical
	No. of Amendments	:	01
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	NA (No variety for the product mentioned in IS)
c)	Sample Size	:	500 gm
3.	List of Test Equipment	:	Please refer ANNEX – A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B
5.	Possible tests in a day :		
	i. Description ii. Identity test iii. Acid content iv. Water insoluble matter v. Free Phenol content vi. Melting point of the extracted acid vii. Loss on drying at 105 ⁰ C		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 1488 : 1989 with the following scope:		
	Name of the product	:	2, 4-D Sodium Salt, Technical

ANNEX - A
TO PRODUCT MANUAL
FOR PESTICIDES - 2, 4-D SODIUM SALT, TECHNICAL
ACCORDING TO IS 1488 : 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.	Identity Test Cl 3.2.1 & Cl 3.2.2 and Annex A of IS 1488	Weighing Balance, Thermometer, Beaker, Micropipette, TLC Plate (20cm x 20cm) and a suitable developing chamber, Sprayer with Bulb, TLC Applicator with Measuring Blades, Hot Air Oven, Weighing Bottle, Chromatographic Chamber, Silica Gel (Neutral), Chloroform, Acetic Acid, Bromocresol Green, Methanol or Ethanol, Ref. Standard Soln. of known Purity; 5% (m/v).
2.	Acid content Cl 3.2.3 & Table-1 (Annex B of IS 1488)	Dilute HCl, Diethyl Ether, Ethanol neutral or alternatively methyl alcohol, neutral, Bromothymol Blue Indicator, Sodium Hydroxide, Sodium Chloride, Distilled Water, Water Bath/Hot Plate, Beaker, Erlenmeyer/conical Flask.
3.	Water Insoluble Matter Cl 3.2.3 & Table-1 (Annex C of IS 1488)	Hot Air Oven (capable of operating at 150 ⁰ C, Weighing Balance, Hot Plate, Distilled Water, Sintered Glass/Gooch Crucible, Stirring rod.
4.	Free phenol content Cl 3.2.3 & Table-1 (Annex B of IS 4321)	2, 4-Dichlorophenol, 4-Aminophenazone, Potassium Ferricyanide, Ammonium Hydroxide, Distilled Water, Weighing Balance, Spectrophotometer, Pipette.
5.	Melting point of the extracted acid Cl 3.2.3 & Table-1 (Annex D of IS 1488)	Kjeldahl Flask, Desiccator, Silica Gel, Distilled Water, Ether, Heating Mantle, Thermometer
6.	Loss on drying Cl 3.2.3 & Table-1 (Annex C of IS 4321)	Thermostatically controlled Air Oven, Analytical balance (0-200 gm, LC-0.1 mg), Desiccator, Silica gel.

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

ANNEX - B

**SCHEME OF INSPECTION AND TESTING
FOR PESTICIDES - 2, 4-D SODIUM SALT, TECHNICAL
ACCORDING TO IS 1488 : 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 stenciled/printed on each container of 2, 4-D Sodium Salt, Technical 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 the material processed and dried 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 tests and analysis reports, the decision regarding conformity or otherwise of a control unit to a given requirement shall be made as follows:

5.2.1 A sample shall be drawn from each control unit and tested for all the requirements of the specification. If the sample fails in any of the requirement (s), the material may be suitably reprocessed and the defect(s) rectified. Such reprocessed material, when tested again, shall satisfy all the requirements of the specification before it is considered fit for marking.

6. RAW MATERIAL – Routine analysis (especially melting point and strength of phenol) of each consignment of raw materials in the factory shall be carried out and appropriate records maintained.

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
3.1	Description	3.1	IS 1488	R	One	Each Control Unit	In case any failure is observed, the future production shall not be marked until the results of further tests indicate conformity with the requirements of the specification.
3.2	Identity Test	3.2.1	IS 1488	R	-do-	Each Control Unit	
		3.2.2 & Annex A	-do-	-do-	-do-	Once in a week	
3.2.3 & Table 1	Acid content	Annex B	IS 1488	R	-do-	Each Control Unit	
-do-	Water Insoluble Matter	Annex C	-do-	R	-do-	-do-	
-do-	Free phenol content	Annex B	IS 4321	R	-do-	-do-	
-do-	Melting point of the extracted acid	Annex D	IS 1488	R	-do-	-do-	
-do-	Loss on drying	Annex C	IS 4321	R	-do-	-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.