



**PRODUCT MANUAL
FOR DICHLORVOS EC
ACCORDING TO IS 5277:1978**

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 5277:1978
	Title	:	Dichlorvos EC
	No. of Amendments	:	05
2.	Sampling Guidelines:		
a)	Raw material	:	Dichlorvos, Technical employed in the manufacture of Dichlorvos EC shall conform to IS 4929.
b)	Grouping guidelines	:	NA (No varieties of the product mentioned in IS)
c)	Sample Size	:	500 ml
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 (Cl. 2.2.1), (ii) Cold test (Cl. 2.2.2), (iii) Flash point (Cl. 2.2.3), (iv) Emulsion Stability (Cl. 2.2.4), (v) Dichlorvos content (Cl. 2.3.1) (vi) Acidity (Cl. 2.3.2)		
6.	Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 5277:1978 with the following scope:		
	Name of the product	:	Dichlorvos (76%) EC.

**ANNEX-A
TO PRODUCT MANUAL
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LIST OF TEST EQUIPMENT

Major test equipment required to test as per requirements of Indian Standards.

S.No.	Test Equipment	Tests used in with clause Reference
1.	Glass beaker, tap water	Description Cl. 2.2.1
2.	Glass Container (100 ml)/Beaker with Cork/stopper fitted thermometer, stirrer, water bath, Ice-cold water.	Cold test Cl. 2.2.2
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.	Flash Point Cl. 2.2.3
4.	Beaker, Mohr-Type Pipette/Dropping Funnel, Glass Rod (Dia- 4 to 6 mm), Graduated Cylinder, Standard Hard Water, Air Conditioner.	Emulsion stability Cl 2.2.4
5.	<p>Mercaptometric Method: Isopropyl Alcohol, Sodium Hydrogen Sulphite, Benzene, Saturated Sodium Bicarbonate Solution, Anhydrous Sodium Sulphate, Normal Dodecylmercaptan solution, Tetramethyl Ammonium Hydroxide solution, Glacial Acetic Acid, Iodine solution, analytical weighing balance, distilled water, separating funnel, filter paper, ground glass stoppered Erlenmeyer flask-100ml.</p> <p>Infra-red Spectrophotometric method: Infra-red Spectrophotometer-capable of recording in the region of 2 to 15µm, with the slit width, gain and response time, Absorption cells, Hypodermic syringe of 1.0 ml capacity with 1.25 mm, Chromatographic column –made of glass, length 250mm and</p>	Dichlorvos content Cl 2.3.1

	internal diameter 20 mm, standard Dichlorvos-recrystallized, chloroform, weighing balance, volumetric flasks, glass wool, cellulose chromatographic grade, 100ml beaker, glass rod, water bath.	
6.	Methyl Red/ Bromocresol Purple Indicator, Standard Sodium hydroxide solution- 0.05 N, Standard Hydrochloric Acid – 0.05 N, General Titration Glassware, weighing balance, flask.	Acidity Cl. 2.3.2

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

ANNEX - A

**SCHEME OF INSPECTION AND TESTING
FOR DICHLORVOS EC ACCORDING TO IS 5277:1978**

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. PACKING AND MARKING – The Standard Mark, as given in the Schedule of the licence, shall be stenciled/printed on each container of Dichlorvos 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 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 submitted by the manufacturer 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 2.0 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 Dichlorvos 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 Dichlorvos 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 – Dichlorvos, technical employed in manufacture of Dichlorvos EC shall conform to IS 4929. A sample from each consignment of the material received, shall be tested for its conformity to IS 4929 and records maintained. Alternately, each consignment shall be covered by test certificate from the supplier guaranteeing its conformity to IS 4929.

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			No. of Sample	Frequency	Remarks
		Clause	Reference				
2.2.1	Description	2.2.1	IS 5277	R	One Sample	Each Control unit	
2.2.2	Cold Test	13.1	IS 6940	R	-do-	-do-	
2.2.3	Flash Point	--	IS 1488 (Pt 20)	R	-do-	-do-	
2.2.4	Emulsion Stability	13.3	IS 6940	R	-do-	-do-	
2.3.1	Dichlorvos Content	Appendix -A	IS 5277	R	-do-	-do-	
2.3.2	Acidity	13.5	IS 6940	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.