



PRODUCT MANUAL
FOR CHLORPYRIFOS, EMULSIFIABLE CONCENTRATES
ACCORDING TO IS 8944 : 2005

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 8944 : 2005
	Title	:	Chlorpyrifos, Emulsifiable Concentrates - Specification
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	Chlorpyrifos technical employed in the Manufacture of Chlorpyrifos EC shall conform to IS 8963.
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 – <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 (vi) Chlorpyrifos Content		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 8944 : 2005 with the following scope:		
	Name of the product	Chlorpyrifos (20 %) or (50 %) EC.	

**ANNEX – A
TO PRODUCT MANUAL
FOR CHLORPYRIFOS EMULSIFIABLE CONCENTRATES
ACCORDING TO IS 8944 : 2005**

LIST OF TEST EQUIPMENTS

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

Sr. No.	Test Equipment	Tests used in with Clause Reference
1	Glass beaker, Tap water	Description Cl 3.2.1
2	Glass Container (100 ml)/Beaker with Cork/stopper fitted thermometer, water bath, Ice-cold water. Thermometer (range - 10 °C to 50 °C, LC 0.5 °C	Cold test Cl 3.2.2 (Clause 13.1 of IS 6940)
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 3.2.3 {IS 1448 (Part 20)}
4	Glass Beaker, Capacity 250ml with internal diameter of 6.0 to 6.5 cm and marked at 100 ml, Analytical Balance- Range 0 to 200gms, LC 0.1mg, Mohr-type pipette, 2ml/ 5 ml capacity/ Dropping funnel, Measuring Cylinder, graduated, Capacity 0 to 100ml , Least count 0.5ml, Stop watch 0 to 60minutes, least count 1sec, Glass Rod, Water Bath with thermometer or digital temp indicator to maintain at 30 ± 1°C, Beaker (250 ml), Standard Hard Water, Air conditioner.	Emulsion stability Cl 3.2.4 (Clause 13.3 of IS 6940)
5	Method I: Gas liquid Chromatograph with flame ionization detector and printer cum plotter cum integrator. Injection Volume 2ml capacity, Micro syringe 5 microlitre capacity Standard glassware Ethyl Acetate A R grade or equivalent,	Chlorpyrifos content Cl 3.3.1 (Annex A of IS 8963)

	<p>Chlorpyrifos reference standard of known purity, Diethyl Phthalate, A R grade or equivalent</p> <p>Method II: Gas liquid Chromatograph with flame ionization detector and printer cum plotter cum integrator, Injection Volume 2ml capacity, Micro syringe 5 microlitre capacity, Standard glass ware, Acetone A.R grade, Chlorpyrifos reference standard of known purity, Dibutyl Phthalate, A.R grade or equivalent.</p>	
6	<p>Methyl red indicator solution-aqueous – 1 % (m/v), Bromocresol purple indicator solution, Standard Sodium Hydroxide Solution – 0.5 N, Standard Hydrochloric acid, Acetone, Distilled water, Analytical Balance Range 0 to 200gms LC 0.1mg, Hot plate, Range ambient to 100°C/ Heating mantle/Water bath, Whatman filter paper, Conical Flask, 250ml Capacity, Graduated Cylinder, Range 0 to 100ml LC 1ml, Test Tube, Litmus paper</p>	<p>Acidity CI 3.3.2 (Clause 13.5 of IS 6940)</p>

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

ANNEX – B

**SCHEME OF INSPECTION AND TESTING
FOR CHLORPYRIFOS, EMULSIFIABLE CONCENTRATES
ACCORDING TO IS 8944 : 2005**

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 Chlorpyrifos 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 Chlorpyrifos EC homogenized at a time in one tank 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 A sample shall be drawn from each control unit and tested for all requirements of the specification. In case the sample fails in any one or more of the requirements, the entire quantity of material of the control unit shall be considered unfit for the purpose of marking. However, the material may be reprocessed suitably and the defects rectified in case the material fails in technical content only. Such reprocessed material when tested again shall satisfy all the requirements of the specification before it is used for marking.

6. RAW MATERIAL – Chlorpyrifos, technical employed in the manufacture of the material shall conform to IS 8963. A test certificate to that effect shall be received from the supplier for each consignment of material received. Alternatively, a sample from each consignment of material received shall be tested for its conformity to IS 8963 before use.

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
3.1.2	Constituents	3.1	IS 8944	S	One	Each consignment	See clause 6 of SIT
3.2.1	Description	3.2.1 (Visual)	IS 8944	R	-do-	Each Control Unit	
3.2.2	Cold test	13.1	IS 6940	R	-do-	-do-	
3.2.3	Flash Point (Abel)	-	IS 1448(P:20)	R	-do-	-do-	
3.2.4	Emulsion stability	13.3	IS 6940	R	-do-	-do-	
3.3.1	Chlorpyrifos content	Annex A	IS 8963	R	-do-	-do-	
3.3.2	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 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.