PRODUCT MANUAL
FOR IMIDACLOPRID SUSPENSION CONCENTRATE (SC)
ACCORDING TO IS 16131 : 2015

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 16131 : 2015
	Title	:	Imidacloprid Suspension Concentrate (SC) — Specification
	No. of Amendments	:	Nil
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	Imidacloprid, technical employed in the formulation of Imidacloprid SC shall conform to IS 15443.
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 –A
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX –B
5.	**Possible tests in a day :**		
	i. Description ii. Spontaneity of Dispersion iii. Suspensibility iv. Wet Sieve Test v. Persistent Foam vi. Imidacloprid Content vii. Acidity / Alkalinity		
6.	**Scope of the Licence :**		
	"Licence is granted to use Standard Mark as per IS 16131 : 2015 with the following scope:		
	Name of the product	Imidacloprid (30.5 %) Suspension Concentrate (SC)	

ANNEX – A
TO PRODUCT MANUAL
FOR IMIDACLOPRID SUSPENSION CONCENTRATE (SC)
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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	Tap water, Beaker
2.	Pourability (Rinsed Residue) Cl 3.2.2 (Annex A of IS 16131)	500 ml stoppered measuring cylinder as per following requirements: Volume equivalent to 1 subdivision = 5 ml of the scale Capacity corresponding to lowest = 50 ml graduation mark Capacity corresponding to highest = 500 ml graduation mark Length of scale = 250 mm Overall height = 39 cm Diameter of base = 10 cm Stopper = B 34 NOTE — High density polyethylene bottles, 1 000 ml volume and Kilner jars, 700 ml volume, can be used but this must be recorded with the result. Analytical balance (0-200 gm, LC- 0.01 mg), Stop watch, Thermometer.
3.	Spontaneity of Dispersion Cl 3.2.3 (Annex B of IS 16131)	Standard Hard Water Graduated Cylinders — Glass stoppered, 250 ml capacity. Glass Suction Tubes — About 40 cm long, 5 mm internal diameter, drawn out at one end to 2-3 mm internal diameter. Standard Glassware Stop watch, Top-pan balance, Vacuum pump, Water bath, Evaporating dish.
4.	Suspensibility Cl 3.2.4 (Annex C of IS 16131)	Standard Hard Water Graduated Cylinders — Glass stoppered, 250 ml capacity. Glass Suction Tubes — About 40 cm long, 5 mm internal diameter, drawn out at one end to 2-3 mm internal diameter. Standard Glassware Stop watch, Analytical balance, Vacuum pump, Evaporation dish, Water bath. Water bath
5.	Wet Sieve Test Cl 3.2.5 (Cl 11.1 of IS 6940)	Beaker of 6·0 to 6.5 cm and 250 ml capacity Pressure assembly - a piston or disc, loosely fitting in the beaker and so formed or weighed as to exert an even pressure of 2.5 g/cm^2, 45 micron IS Sieve, Rubber hose - of about 10 mm internal diameter.

6.	Persistent Foam Cl 3.2.6 (Annex D of IS 16131)	Standard Hard Water Graduated Cylinder— Glass stoppered, 250 ml capacity with 2 ml graduations. The distance between the 0 mark and the 250 ml mark should be 20 cm to 21.5 cm. The distance between the 250 ml mark and the bottom of the stopper should be 6 cm to 8 cm. NOTE — The cylinder should be clean and free from grease. Stopwatch, Top pan balance
7.	Imidacloprid Content Cl 3.3.1 (Annex A of IS 15443)	High performance liquid chromatograph (HPLC) equipped with UV-VIS detector and coupled to a printer-plotter-cum-integrator. The operative conditions suggested below are typical, which can be changed provided the standardization is done: Column : 150 mm x 3.9 mm, SS, packed with Novapak – C 18 Detector : UV (278 nm) Solvent system : Acetonitrile :Water (80 :20 vh) Solvent flow rate : l.0 ml/min Temperature : Ambient Sample size : 20 µl Micro Syringe — 5/25 µl Glassware — Volumetric flask 100 ml; pipettle 10 ml. 20 ml; microsyringe 20 ml, Milipore filtration assembly Acetonitrile — HPLC grade or equivalent, Water — HPLC grade or equivalent, Internal Standard — Acenaphthene AR grade or equivalent, Reference Imidacloprid Standard of Known Purity, Magnetic Stirrer, Analytical balance, Pippette.
8.	Acidity / Alkalinity Cl 3.3.2 (Cl 13.5 of IS 6940)	Reagents a) Methyl red indicator solution - aqueous one percent (m/v). b) Bromocresol purple indicator solution- one percent (m/v) in ethyl alcohol. c) Standard sodium hydroxide solution - 0.05 N. d) Standard 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 IMIDACLOPRID SUSPENSION CONCENTRATE (SC) ACCORDING TO IS 16131 : 2015

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 Imidacloprid SC 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 Imidacloprid SC mixed in a mixer at a time shall constitute one 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 test results, the decision regarding conformity or otherwise, of a control unit to a given requirement shall be made as follow:

5.2.1 A sample shall be drawn from each control unit and tested for all the requirements of the specification. In case the sample fails in any one or more of the requirements, the entire quantity of the material of the control unit shall be considered as 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 requirement only. Such reprocessed material when tested again shall satisfy all the requirements of the specification before it is used for marking.

6. RAW MATERIAL –Imidacloprid technical, used in the manufacture of Imidacloprid SC shall conform to IS 15443. A test certificate to that effect shall be obtained from the supplier for each consignment of Imidacloprid technical received. Alternatively, a sample from each consignment of material received shall be tested for its conformity to IS 15443. It is recommended that routine analysis of each consignment of other raw materials used in the manufacture of Imidacloprid SC 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**
3.2.1	Description	3.2.1	IS 16131	R	1	Each Control Unit	See clause 5 of SIT
3.2.2	Pourability (Rinsed Residue)	Annex A	IS 16131	R	1	-do-	-do-
3.2.3	Spontaneity of Dispersion	Annex B	IS 16131	R	1	-do-	-do-
3.2.4	Suspensibility	Annex C	IS 16131	R	1	-do-	-do-
3.2.5	Wet Sieve Test	11.1	IS 6940	R	1	-do-	-do-
3.2.6	Persistent Foam	Annex D	IS 16131	R	1	-do-	-do-
3.3.1	Imidacloprid Content	Annex A	IS 15443	R	1	-do-	-do-
3.3.2	Acidity / Alkalinity	13.5	IS 6940	R	1	-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. Subcontracting 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.