



**PRODUCT MANUAL
FOR TRICHLOROETHYLENE, TECHNICAL
ACCORDING TO IS 245:2020**

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 245:2020
	Title	:	Trichloroethylene, Technical
	No. of Amendments	:	NIL
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	Not applicable – sample of each type to be tested
c)	Sample Size	:	2 x 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 :	:	Description, Relative Density, Alkalinity, Free Chlorine, Colour, Moisture
6.	Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 245:2020 with the following scope:		
	Name of the product	Trichloroethylene, Technical	
	Type	Type 1/Type 2	

ANNEX-A
PRODUCT MANUAL

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

S.NO	Test Equipment	Tests used in with clause Reference
1.	Electronic Weighing Balance Relative Density Bottle Dessicator Thermometer(L.C : 0.1 deg C) Conical flask Water Bath(To maintain temp27 +/- 2 deg C	Relative Density Table 1, A-2 of IS 245:2020
2.	Electronic Weighing Balance Hot air oven (to maintain temp of 100+/-2 deg C) Platinum/Silica or Glass Dish of about 75 mm dia. Desiccator	Residue on evaporation Table1, A-3 of IS 245:2020
3.	Electronic Weighing Balance Distillation flask(as per fig1 of A-4 of IS 245:2020) Thermometer Liebig Condenser (as per fig 2 of A-4 of IS 245:2020) Distillation Receiver(as per fig 3 of A-4 of IS 245:2020) Barometer Bunsen Burner	Distillation yield Table1, A-4 of IS 245:2020
4.	Electronic Weighing Balance Glass stoppered conical flask Polythene indicator bottle Sodium Hydroxide Rectified Spirit	Alkalinity Table1, A-5 of IS 245:2020

	Hydrochloric acid Bromophenol Blue Indicator	
5	Electronic Weighing Balance Measuring Cylinder Glass stoppered conical flask 3,3 Dimethylnaphthidine Glacial acetic acid	Free Chlorine Table1, A-6 of IS 245:2020
6.	Electronic Weighing Balance Stability Apparatus Mild Steel strip Measuring cylinder Glass stoppered conical flask Oxygen cylinder Bromophenol blue indicator Sodium Hydroxide Neutralized distilled water	Stability under Reflux Table1, A-7 of IS 245:2020
7.	Microscope Carbon Steel strips Measuring Cylinder Glass bottle Smooth emery sheet	Resistance to corrosion Table1, A-8 of IS 245:2020
8	Electronic Weighing Balance Nessler cylinders Burette Colorimeter or Spectrophotometer Potassium chloroplatinate Cobaltous chloride hexahydrate Hydrochloric acid concentrate Neutralized distilled water and other reagents	Colour, Table1 of IS 245:2020 and IS 8768:2000
9	Karl Fischer auto titrator Pipette	Moisture, Table1 of IS 245:2020 and IS 2362:1993

Microlitre Syringe	
Karl fischer reagent	
Methonal	
Iodine	
Pyridine	
Sulphur dioxide	
Sodium Tartarate	

The list above is indicative and may not be taken as exhaustive

ANNEX – B

**SCHEME OF INSPECTION AND TESTING
FOR TRICHLOROETHYLENE, TECHNICAL
ACCORDING TO IS 245:2020**

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.

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 marked on the container in indelible ink or through a transfix label provided always that material so marked conform to requirements of the specification.

Packing and Marking shall be done as per the provisions of the Indian Standard. In addition, the following shall be incorporated on each container:

- i) BIS Licence Number CM/L.....and
- ii) 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 of the same type collected in the final storage tank in the pure form after thorough mixing at a time shall constitute a control unit.

4.1 COMPOSITE SAMPLE – Three samples shall be drawn from a control unit at the time of filling the containers, one at the beginning, second in the middle and third towards the end and tested for description. A composite sample shall be made by mixing these three samples and this composite sample shall be analysed for all the other requirements of the specification.

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.

6. 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	Cl. reference	Test Methods		No. of Sample	Frequency	Remarks
4.1	Description	4.1	IS 245	R	3	Each control unit	
4.2 Table 1 S No (i)	Relative density at 27/27°C	A-2	-do-	R	One composite sample*	-do-	*See 4.1
4.2 Table 1 S No (ii)	Residue on evaporation	A-3	-do-	-do-	-do-	-do-	-do-
4.2 Table 1 S No (iii)	Distillation yield between 86 and 88°C	A-4	-do-	-do-	-do-	-do-	-do-
4.2 Table 1 S No (iv)	Alkalinity (as Na ₂ CO ₃)	A-5	-do-	-do-	-do-	-do-	-do-
4.2 Table 1 S No (v)	Free chlorine	A-6	-do-	-do-	-do-	-do-	-do-
4.2 Table 1 S No (vi)	Stability under reflux	A-7	-do-	-do-	-do-	Once a week (for each type)	-do-
4.2 Table 1 S No (vii)	Resistance to corrosion	A-8	-do-	-do-	-do-	-do-	-do-
4.2 Table 1 S No (viii)	Colour		IS 8768	-do-	-do-	-do-	-do-
4.2 Table 1 S No (ix)	Moisture		IS 2362	-do-	-do-	-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 and submit it for approval to BO Head.