



उत्पाद मैनुअल
Morpholine - Specification
IS 12084:2018 के अनुसार

PRODUCT MANUAL
FOR Morpholine - Specification

ACCORDING TO IS 12084:2018

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

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.	उत्पाद Product	:	IS 12084:2018
	शीर्षक Title	:	Morpholine - Specification
	संशोधनों की संख्या No. of amendments	:	1
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Not applicable
c)	नमूने का आकार Sample Size	:	1000 ml, min.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-A

4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	Description, detection of ammonia, Purity, relative density, Boiling range, residue on evaporation, colour scale, chloride.		
6.	लाइसेंस का दायरा / Scope of the Licence:		
	Licence is granted to use Standard Mark as per IS 12084:2018 with the following scope:		
	Name of the product		Morpholine

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI-110002

ANNEX – A

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

S.No.	Clause No.	Test Chemicals /Equipment List*
1.	Description 4.1	Visual
2.	Free Ammonia 4.2 IS 11255	Titration Method Probe Impinger Pump Valve, Rota meter, Dry gas meter, Glass wash bottles Polyethylene storage Bottles Distillation apparatus pH Meter Erlenmeyer Flask Burette Water 0.1 N Sulphuric acid Borate buffer solution 0.1N Sodium hydroxide Neutralization agent Mixed indicator solution Absorbant solution Standard sulphuric acid 0.002 N
3.	Purity (as Morpholine) 4.3 - Table 1 - SI No - i	Hydrochloric acid Sodium carbonate Methyl red indicator Sodium hydroxide Potassium hydrogen-phthalate Phenolphthalein indicator Burette Pipette Measuring cylinder Conical flask
4.	Relative density, 20/20 °C 4.3 - Table 1 – SI No - ii	Density bottle Thermometer
5.	(Pt-Co) Colour scale 3025(Part 4) SI No - iii	Color comparator Cobalt chloride Hydrochloric acid Potassium chloroplatinate Nessler cylinder Volumetric flask Pipette
6.	Boiling range 5298 SI No - iv	Distillation unit Thermometer

7.	Residue on evaporation 4.3 - Table 1 - SI No - v	Oven Platinum/Silica dish Desiccator Silica gel
8.	Ash content 4.3 - Table 1 - SI No - vi	Muffle Furnace Platinum/Silica dish Desiccator Silica gel
9.	Iron (as Fe) 4.3 - Table 1 - SI No - vii (3025 Part 53 or (Part 2) or (Part 65)	Inductive coupled plasma Spectro meter/ UV Spectrophotometer Hydrochloric acid Hydroxylamine- Hydrochloride Ammonium acetate Glacial acetic acid Di-isopropyl ether Sodium acetate Potassium permanganate Ferrous ammonium – Sulphate Sulphuric acid 1.10-phenanthroline Nitric acid Beaker Volumetric flask Pipette Measuring cylinder Conical flask Glass beads Separating funnel 0.45 um membrane filter pH paper/ Mercuric Chloride Potassium Hydroxide Potassium Iodide Ammonium Sulphate
10.	Copper (as Cu) 4.3 - Table 1 - SI No - viii 3025(part 42) or (Part 2) or (Part 65)	Inductive coupled plasma spectro meter/ UV Spectrophotometer Hydrochloric acid Sulphuric acid Nitric acid Ammonium hydroxide Chloroform Hydroxylamine- Hydrochloride Isopropyl alcohol Neocuproine Sodium citrate Copper metal Hydrogen peroxide Beaker Volumetric flask Pipette Measuring cylinder Conical flask

		Glass beads Separating funnel pH paper/ Mercuric Chloride Potassium Hydroxide Potassium Iodide Ammonium Sulphate
11.	Nickel (as Ni) 4.3 - Table 1 - SI No - ix 3025 (Part 54) or (Part 2) or (Part 65)	Inductive coupled plasma spectro meter/ UV Spectrophotometer Ammonium hydroxide Hydrochloric acid Citri acid Dimethylglyoxime Ethyl alcohol Chloroform Bromine water Ammonium nickel sulphate Nitric acid Sulphuric acid Beaker Volumetric flask Pipette Measuring cylinder Conical flask Glass beads Separating funnel pH paper/ Mercuric Chloride Potassium Hydroxide Potassium Iodide Ammonium Sulphate
12.	Silica (as SiO ₂) 4.3 - Table 1 - SI No - x 3025 (Part 35) or (Part 2) or (Part 65)	UV Spectro photo meter Sodium bicarbonate Sulphuric acid Ammonium molybdate Hydrochloric acid Ammonia solution Sodium hydroxide Oxalic acid Sodium metasilicate- Nonahydrate Potassium chromate Sodium borate decahydrate Beaker Volumetric flask Pipette Measuring cylinder Conical flask Glass beads Platinum/porcelain dish pH paper Nessler cylinder Glass Funnel
13.	Chloride (as Cl) 4.3 - Table 1 - SI No - xi 3025(part 32)	Potassium chromate Silver nitrate Sodium chloride Aluminium ammonium-

		Sulphate Ammonium hydroxide Phenolphthalein indicator Sodium hydroxide Sulphuric acid Hydrogen peroxide Beaker Volumetric flask Pipette Measuring cylinder Conical flask pH paper
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The list above is indicative only and may not be considered as exhaustive

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. **LABORATORY-** A laboratory shall be maintained, which shall be suitably equipped (as given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the method given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipment.

2. **TEST RECORD-** 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 license, shall be marked on the container of the product provided always that material so marked conform to requirements of the specification.

3.1 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 License 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 produced in a day from same consignment of raw materials shall constitute a control unit

5. **LEVELS OF CONTROL** :- The tests as indicate in Table 1 and at the levels of controls in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark.

6. **REJECTION** - 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 permeated.	Level of control		
Cl.	Requirement	Test method			No. of sample	Frequency	Remark
		Clause	Reference				
4.1	Description	4.1	IS 12084 : 2018	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.2	Free Ammonia	4.2	IS 11255	R	One	Once in a week	
4.3	Requirements						
Table 1 Sl.no. i	Purity (as Morpholine)	Annex B	IS 12084 : 2018	R	One	Each control unit	
ii	Relative density,20/20 °C	Annex C	IS 12084 : 2018	R	One	Each control unit	
iii	(Pt-Co) Colour scale		IS 3025 (Part 4)	R	One	Each control unit	
iv	Boiling range		IS 5298	R	One	Each control unit	
v	Residue on evaporation	Annex D	IS 12084 : 2018	R	One	Each control unit	
vi	Ash content	Annex E	IS 12084 : 2018	R	One	Each control unit	
vii	Iron (as Fe)	Annex F	IS 3025 (3025 - Part 53 or (Part 2) or (Part 65)	S	one	Once in a month	
viii	Copper (as Cu)	Annex F	IS 3025 (Part 42) or (Part 2) or (Part 65)	S	one	Once in a month	
ix	Nickel (as Ni)	Annex F	IS 3025 (Part 54) or (Part 2) or	S	one	Once in a month	

			(Part 65)				
x	Silica (as SiO ₂)		IS 3025 (Part 35) or (Part 2) or (Part 65)	S	one	Once in a month	
xi	Chloride (as Cl)		IS 3025 (Part 32)	R	one	Once in a week	

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.