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उत्पाद मानुयल
Specification for Naphthalene
IS 539: 1974 के अनुसार

PRODUCT MANUAL FOR
Specification for Naphthalene According to
IS 539: 1974

भारतीय मानक ब्यूरो)अनुरूपता मूल्यांकन (विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन मे रीति और पारदर्शिता के सुसंगता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप मे उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग 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 539:1974
	शीर्षक **Title**	:	Specification for Naphthalene
	संशोधन संख्या **No. of Amendments**	:	NIL
2.	**नमुनाकरण दिशा निर्देश** **Sampling Guidelines:**		
a)	**कच्चा माल** Raw material	:	No specific raw material requirement
b)	**समूहिकरण दिशा निर्देश** Grouping guidelines	:	Sample of each grade (Grade 1 & Grade 2) to be drawn and tested separately
c)	**नमूनेका परिमाण** Sample Size	:	500 grams
3.	**परीक्षण उपकरणो की सूची** **List of Test Equipment**	:	Please see ANNEX - A
4.	**निरीक्षण व परीक्षण स्कीम** **Scheme of Inspection and**	:	Please see ANNEX - B

	एक दिन में संभावित परीक्षण **Testing**		
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day :**		
	All tests are possible to be carried out in a day		
6.	**लाइसेन्स का कार्यक्षेत्र /Scope of the Licence** :		
	IS 539:1974 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्रके लिए प्रदान किया जाता है **Licence is granted to use Standard Mark as per IS 539:1974 with the following scope:**		
	Name of the product	Naphthalene	
	Grade	1 (Pure) , 2 (Hot pressed)	

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ANNEX-A TO THE PRODUCT MANUAL
FOR SPECIFICATION FOR NAPTHALENE ACCORDING TO IS 539:1974

LIST OF TESTING EQUIPMENT

Sr. No.	Test Equipment	Tests used in with Clause Reference
01	a) Conditioning chamber for maintaining temperature 50 ± 1° C b) Stop Watch	Test for staining, Cl 4.2
02	a) Iodine b) Potassium Iodide c) Glass Tubes	Colour, Cl 4.3, Table 1, Sr. No. (i), Grade 2
03	a) Outer glass test tubes b) Inner glass test tubes c) 1000 ml beaker about 150 mm in height d) Thermometer- It shall be of the mercury in glass type, solid stem and filled with inert gas at suitable pressure. The stem shall be of lead glass or other suitable glass with enamel black. It should further confirm to following requirements: — Range : 65 to 90° C — Graduation : 0.1° C — Immersion, mm : 100 (from bottom of bulb) — Overall Length, mm, *Max* : 400 — Stem diameter (mm) : 6 to7 — Bulb shape : Cylindrical — Bulb length, mm : 15 ± 5 — Bulb diameter, mm : 4.5 to 6.0 — Length of main scale, mm, *Min* : 220 — Longer lines of each : 0.5 and 1°C — Fully figured at each : 2° C — Expansion Chamber : Required to allow heating to 110° C — Top Finish : Ring — Scale error not to exceed : ± 0.4° C — Use before stability check, hours, *Max* : 500 e) Weighing balance. f) Conical Flask	Crystallizing Point , Cl 4.3, Table 1, Sr.No.(ii)

	g) Water Bath	
04	a) Flask of 500 to 1000 ml as per requirements specified in fig 2 of Appendix B of IS 539:1974 b) Condenser as per requirements specified in fig 3 of Appendix B of IS 539:1974 c) Receiver as per requirements specified in fig 4 of Appendix B of IS 539:1974 d) Oil bath or an electric heater provided with sliding rheostat e) Copper wire f) Potassium dichromate - Sulphuric acid, cleaning solution g) Xylene or Toluene h) Weighing balance i) Stop Watch j) Water Bath k) Asbestos Cloth	Moisture Content, percent by mass, Cl 4.3, Table 1, Sl No. (iii)
05	a) Weighing balance b) Oven c) Porcelain or silica crucible d) Desiccator	Determination of Ash, percent by mass, Cl 4.3, Table 1, Sl No. (iv)
06	a) Cobalt chloride b) Ferric chloride c) Cupric sulphate d) Hydrochloric Acid - 1% (conforming to IS 265) e) Sulphuric Acid (conforming to IS 266) f) Test Tubes g) Water Bath h) Stop watch	Acid Wash Test, Cl 4.3, Table 1, Sl No. (v)
07	a) Weighing balance b) Benzene c) Water Bath d) Beaker e) Stirrer f) Tared Sintered or Gooch crucible g) Desiccator i) Oven	Determination of matter insoluble in benzene, Cl 4.3, Table 1, Sl No. (vi)
08	a) Weighing balance b) Flat bottomed, circular, porcelain or silica dish c) Desiccator d) Oven	Determination of non volatile matter, Cl 4.3, Table 1, Sl No. (vii)
09	a) Porcelain or Platinum Crucible or Capsule, 50 ml capacity b) Silica Plate c) Muffle Furnace	Total Sulphur, percent by mass, Cl 4.3, Table 1, Sl No. (viii)

	d) Air Oven e) Eschka`s mixture f) Conc. Hydrochloric Acid (conforming IS 265) g) Potassium Sulphate Solution h) Barium Chloride Solution i) Methyl Red Indicator j) Ammonia Solution k) Hydrogen Peroxide l) Weighing Balance m) 212 Micron IS Sieve n) Filter Pad or Medium Textured Double Acid Washed Filter Paper o) Asbestos in a Gooch Crucible p) Titration Assembly q) Beaker r) Pipette	
10	a) Digestion Flask (Kjeldahl Flask) b) Gas Burner or Electrical Heater c) Conc. Sulphuric Acid (conforming to IS 266) d) Potassium Sulphate e) Selenium Powder f) Sucrose g) Standard Sulphuric Acid h) Sodium Hydroxide Solution i) Saturated Boric Acid Solution j) Methyl red and Methylene Blue Mixed Indicator k) 212 Micron IS Sieve l) Weighing Balance m) Round-Bottom flask fitted with a tap or thistle funnel and an efficient splash head n) Condenser o) Conical Flask p) Long Spatula	Total Nitrogen, percent by mass Cl 4.3, Table 1, Sl No. (ix)

This is an indicative list for the purpose of guidance only and may not be taken as an exhaustive.

ANNEX-B TO THE PRODUCT MANUAL
FOR SPECIFICATION FOR NAPTHALENE ACCORDING TO IS 539:1974

SCHEME OF INSPECTION AND TESTING

1. LABORATORY - A laboratory shall be maintained, which shall be suitably equipped (as per the requirement given in column 2 of Table1) 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 equipment.

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 license, shall be stencilled on each container of naphthalene or printed on the label applied to the container, as the case may be, provided always that the naphthalene in each container to which this Mark is thus applied conforms to every requirement of the specification.

3.1 In addition, the following information shall also be given on each container or on the label applied to it:

a) Name of the manufacturer or trade mark, if any;
b) Brand name, if any;
c) Made in India, if required;
d) Grade and net weight of the contents; and
e) Batch No. or identification in code or otherwise to enable the date and batch of manufacture to be traced back to factory records.

4. CONTROL UNIT– Naphthalene balls produced continuously in a day from same distillation batch of Naphthalene powder/flakes shall constitute a control unit.

5. LEVELS OF CONTROL- The analyses and tests as indicated in Table 1 and at the levels of control specified therein shall be carried out on the whole production of the factory covered by this scheme and appropriate records and charts maintained in accordance with paragraph 2 above.

5.1 The procedure for drawing the test samples from each distillation batch shall be as follows:

5.1.1 A visual examination shall be carried out of the naphthalene made from each distillation batch, in the order of manufacture, to check up impurities. The naphthalene appearing to be defective shall be discarded.

5.1.2 Two samples shall be taken from remaining naphthalene . These samples shall be so chosen that one represents the first accepted material, in the order of manufacture from the fore run of the production and the second represents the last accepted material in the order of manufacture.

5.2 On the basis of test and analysis results, the decision regarding conformity or otherwise of a distillation batch of naphthalene with the requirements of the specification shall be made as follows:-

5.2.1 Each of the samples taken for tests shall satisfy all the requirements of the specification.

5.2.2 If any sample either from fore run or from the tail run folio in respect of any of the requirements of the specification, the material of naphthalene from which the sample(s) had been drawn shall be rejected. Fresh sample(s) shall then be drawn from the material next to the rejected one(s) in the order of manufacture and tested similarly; the process of sampling and testing being repented till the material tested pass all the requirements of the specification.

5.2.3 The naphthalene which are rejected in visual examination or in tests may be reprocessed in conjunction with other distillation batches or separately and the defect rectified. Such reprocessed material, when tested again, shall satisfy all the requirements of the specification before it is used for marking.

5.3 Naphthalene balls shall also be produced from Naphthalene powder/flakes purchased from other manufacturers with ISI mark or along with a test certificate for each distillation batch. In case Naphthalene powder/flakes are received without test certificate, the firm shall test one sample from each distillation batch for all the requirements as per IS 539 : 1974 before using it for the production of Naphthalene balls and which meets the criteria of conformity.

5.4 Routine tests for the raw material used in the manufacture of naphthalene shall be carried out and appropriate records shall be maintained.

5.5 In respect of all other clauses of the specification, the factory will maintain appropriate controls and checks to ensure that their product conforms to the various requirements of the specification.

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. A separate record providing the detailed information regarding the rejected control units and mode of their disposal shall be maintained. Such material shall in no case be stored together with that conforming to the specification. The Standard Mark (if already applied) on rejected material should be defaced.

TABLE 1 LEVELS OF CONTROL

(Para 5 of the Scheme of Testing and Inspection)

(1)				(2)	(3)		
Test Details				**Test equipment requirement R:required (or) S: Sub-contracting permitted**	**Levels of Control**		
Clause	**Requirements**	**Test Method**			**No. of Samples**	**Frequency**	**Remarks**
		Clause	**IS**				
4.1	Description	4.1.1 4.1.2	IS 539	R	Adequate visual inspection		
4.2	Staining	4.2	IS 539	R	Two	Each Control Unit	Applicable only for Grade 1
4.3 ,Table 1	**Requirements for Napthalene**						
i)	Colour	Table 1	IS 539	R	-do-	Each Control Unit	-------
ii)	Crystallizing Point, ºC	Appendix-A	IS 539	R	-do-	Each Control Unit	-------
iii)	Moisture Content, percent by mass	Appendix -B	IS 539	R	-do-	Each Control Unit	-------
iv)	Ash, percent by mass	Appendix - C	IS 539	R	-do-	Each Control Unit	-------
v)	Acid wash test	Appendix-D	IS 539	R	-do-	Each Control Unit	Applicable only for Grade 1
vi)	Matter insoluble in benzene, percent by mass	Appendix-E	IS 539	R	-do-	Each Control Unit	------

vii)	Non-volatile matter at 160 ºC, percent by mass	Appendix-F	IS 539	R	-do-	Each Control Unit	------
viii)	Total Sulphur, percent by mass	5.1	IS 1350 (Part 3)	R	-do-	Each Control Unit	Applicable only for Grade 2
ix)	Total nitrogen, percent by mass	Table 1	IS 1350 (Part 4/Sec 2)	R	-do-	Each Control Unit	Applicable only for Grade 2
5	Packing and Marking	5.1,5.2	IS 539	R	The material shall be packed as agreed to between the purchaser and supplier		

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.