



रसायन उद्योगों के लिए श्रनबुझे और बुझे चूने की विशिष्टि भाग 2 बुझा चूना
IS 1540 (Part 2):1990 के अनुसार

PRODUCT MANUAL FOR QUICKLIME AND HYDRATED LIME
FOR CHEMICAL INDUSTRIES – SPECIFICATION
PART 2 HYDRATED LIME
ACCORDING TO IS 1540 (Part 2):1990

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता 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 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.	मानक संख्या Product	:	IS 1540 (Part 2): 1990
	शीर्षक Title	:	Quicklime and Hydrated Lime for Chemical Industries-Specification, Part 2- Hydrated Lime
	संशोधनों की संख्या No. of Amendments	:	1
2.	नमूना दिशानिर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	NA
b)	समूहीकरण दिशानिर्देश Grouping guidelines	:	Each grade shall be tested to be covered in the scope of Licence. Optional requirement shall be tested to include in the scope
c)	नमूने का परिमाण Sample Size	:	500 gm
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	- Grade - Optional Requirements of particle size for material used in the manufacture of grease Note: This section indicates declared values to be specified against a parameter (in Test Requests) to enable testing of sample against the requirement and determine its conformity. Any other requirements/parameters may also be declared as per the standard, as applicable.

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:		
	(i) Description (ii) Moisture (iii) Available Lime (iv) Acid Insoluble Matter (v) Iron (vi) Alumina (vii) Dead Burnt Lime (viii) Carbon Dioxide (ix) Manganese (x) Optional Requirements		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	IS 1540 (Part 2): 1990 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 1540 (Part 2): 1990 with the following scope:		
	उत्पाद का नाम Name of the product	Hydrated Lime for Chemical Industries	
	ग्रेड Grade	Grade A-Suitable for grease manufacture Grade B – Suitable for stable bleaching powder manufacture Grade C- Suitable for water treatment	
	अतिरिक्त मांग Additional Requirement (Optional Requirements of particle size for material used in the manufacture of grease)	With/Without	

BUREAU OF INDIAN STANDARDS
 Manak Bhawan,9, Bahadur Shah Zafar Marg,
 New Delhi – 110002

ANNEX-A**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.	<u>Moisture:</u>	• Weighing Balance • Desiccator • Vacuum Pump • Stop Watch • Phosphorus Pentoxide
2.	<u>Available Lime:</u>	Iodine Method • Weighing Balance • Hot Plate • Glass stoppered conical flask • Measuring Cylinder • Volumetric Flask • Pipette • Titration assembly • Stop Watch • Standard sodium thiosulphate solution • Standard iodine solution • Starch indicator solution • Mercuric iodide Sugar Method • Weighing Balance • Measuring Cylinder • Volumetric Flask • Whatman Filter No. 40 or its equivalent • Titration assembly • Stop Watch • Rectified Sprit • Standard Hydrochloric Acid • Standard Sodium Hydroxide Solution • Sugar Solution • Phenolphthalein Indicator solution • Shaker/agitator
3.	<u>Acid Insoluble Matter:</u>	• Weighing balance • Hot Air oven • Platinum Crucible • Muffle Furnace

		• Desiccator • Beaker • Measuring Cylinder • Hot Plate • Stop Watch • Filter Paper • Concentrated Hydrochloric Acid
4	<u>Iron:</u>	• Weighing balance • Hot Air oven • Platinum Crucible • Muffle Furnace • Desiccator • Beaker • Measuring Cylinder • Hot Plate • Stop Watch • Filter Paper • Titration Assembly • Conc. Hydrochloric Acid • Ammonium Hydroxide • Standard Potassium Permanganate Solution • Nitric Acid • Potassium Bisulphate • Sulphuric Acid • Jones reductor
5.	<u>Alumina:</u>	• Weighing balance • Hot Air oven • Platinum Crucible • Muffle Furnace • Desiccator • Beaker • Measuring Cylinder • Hot Plate • Stop Watch • Filter Paper • Titration Assembly • Conc. Hydrochloric Acid • Ammonium Hydroxide • Standard Potassium Permanganate Solution • Nitric Acid • Potassium Bisulphate • Sulphuric Acid • Jones reductor
6.	<u>Magnesia:</u>	Method A • Volumetric Flask • Measuring Cylinder

		• Filter Paper • Gooch Crucible • Hot Air oven • Muffle Furnace • Hydrochloric Acid • Ammonium Hydroxide • Diammonium Hydrogen Phosphate • Rectified Sprit Method B • Buffer Solution • Eriochrome Black T Indicator • EDTA • Pipette • Conical flask • Titration assembly • Weighing balance
7.	<u>Dead Burnt lime:</u>	<u>Carbonate</u> • Apparatus as per cl 7.1 of IS 1514:1990 • Weighing Balance • Sodium Carbonate • Volumetric Flask • Measuring Cylinder <u>Available Lime</u> • As mentioned in Sl no 2 of annex-A <u>Total Calcium oxide</u> <u>Method-A</u> • Ammonium Oxalate Solution • Ammonium hydroxide • Sulphuric Acid • Potassium Permanganate • Diammonium hydrogen phosphate • Hot plate • Filter paper • Beaker, Measuring Cylinder, Wash Bottle • Titration assembly <u>Method-B</u> • Hydrochloric Acid • EDTA solution • Calcium Chloride Solution • Eriochrome Black T • Murexide Indicator/Calcein Indicator • Buffer Solution

		• Sodium Hydroxide • Weighing Balance <u>Sulphates</u> • Hydrochloric Acid • Barium Chloride • Weighing Balance • Beaker, Measuring Cylinder, Wash Bottle • Hot Plate • Tared Gooch or tared sintered glass crucible G. No 4 • Hot air oven
8.	<u>Carbon Dioxide:</u>	• Distilled Water • Absorption Train for carbon dioxide apparatus as per fig 1 of IS 1540 (Part 1):1980 • Hydrochloric Acid • Concentrated Sulphuric Acid • Pumice Impregnated with Copper Sulphate (pumice, sieve of approx. 5 mm, casserole, copper sulphate hot plate, air bath, dessicator) • Ascarite or soda Asbestos • Magnesium Perchlorate • Weighing Balance • Funnel
9.	<u>Manganese</u>	• Manganese Metal • Sulphuric Acid • Nitric Acid • Phosphoric Acid • Potassium Periodate • Hot Plate • Weighing Balance • Nickle Crucible • Muffle Furnace • Perchloric Acid • Spectrophotometer
10.	<u>Optional Requirements</u>	• 45 micron IS Sieve • 75 micron IS Sieve • Weighing Balance • Hot air oven

ANNEX-B

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e., a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e., lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.3.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: Quicklime and Hydrated Lime for Chemical Industries manufactured in a day from the same consignment/source of supply of raw material

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that Manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters all parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as maybe defined and put in place by the manufacturer and testing parameters/requirements which can only be to be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.1.1 MSME manufacturers may utilize common cluster-based facilities as per the guidelines for the utilization of cluster-based test facilities by MSMEs or the provisions of the Sharing of testing facilities or get testing done from BIS BIS-recognized/empaneled laboratory or any other laboratory having a valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 Large Scale manufacturers shall maintain an in-house laboratory equipped with at least test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out according to the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.2.1 Alternatively, in lieu of an in-house laboratory, large-scale manufacturers can also utilize the provisions of the Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.3 TEST RECORDS- The manufacturer, maintaining an in-house laboratory or utilizing common cluster-based facilities or shared test facilities, shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to a BIS-recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark, as given in the Schedule of the license shall be legibly and indelibly marked on the packages of HYDRATED LIME FOR CHEMICAL INDUSTRIES, provided that the material thus marked conforms to every requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The package shall also be marked with the following additional requirement.

a) *“For BIS certification details please visit www.bis.gov.in”*

4. REJECTION - All the production that conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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.

TABLE1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) Subcontracting permitted	Levels of Control		
SL No.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
i)	Description	5.1	IS 1540 (Part 2)	R	One	Each Control Unit	-
ii)	Moisture	18	IS 1514	R	One	Each Control Unit	-
iii)	Available Lime	9	IS 1514	R	One	Each Control Unit	-
iv)	Acid Insoluble Matter	10	IS 1514	R	One	Each Control Unit	-
v)	Iron	11	IS 1514	R	One	Each Control Unit	-
vi)	Alumina	11	IS 1514	R	One	Each Control Unit	-
vii)	Magnesia	13	IS 1514	R	One	Each Control Unit	-
viii)	Dead Burnt Lime	15	IS 1514	R	One	Each Control Unit	-
ix)	Carbon Dioxide	A-2	IS 1540 (Part 1)	R	One	Each Control Unit	-
x)	Manganese	A-5	IS 1540 (Part 1)	R	One	Each Control Unit	-
xi)	Optional Requirements	16	IS 1514	R	One	Each Control Unit	-