



**PRODUCT MANUAL
FOR CAUSTIC SODA
ACCORDING TO IS 252:2013**

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 252:2013
	Title	:	CAUSTIC SODA
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	Not Applicable
c)	Sample Size	:	500 gms each for Lye and/or solid.
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 :		
	a) Form and Description b) Relative density c) Sodium Carbonate, d) Sodium Hydroxide, e) Chlorides, f) Silicates. g) Iron, h) Copper, i) Manganese, j) Matter insoluble in water		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 252:2013 with the following scope:		
	Name of the product	CAUSTIC SODA	
	Form	Solid, Lye (Grade 1 and/or Grade 2)	

ANNEX-A

**TO PRODUCT MANUAL
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List of Test Equipments

Major test equipment required to test as per the Indian Standard.

SI No	Test Equipment	Test Used and Clause of Standard
1	<p>Referee method</p> <p>FIG 1 Assembly of apparatus for Determination of carbonates. Separating funnel Measuring cylinder</p> <p>Reagents: Distilled water Hydrochloric acid,12N Sodium chloride Sulphuric acid Methyl orange Sodium hydroxide,6N</p> <p>Weighing balance</p>	Fig 1 of IS252:2013 Clause A-3.2 Method B, Determination of carbonates
2	<p>For Routine Tests</p> <p>Reagents: Hydrochloric Acid,1N Hydrochloric Acid,0.1N Methyl orange indicator solution Phenolphthalein indicator solution Distilled water</p>	A-3.1 Double indicator method, Determination of carbonates
	<p>Glassware: Burette</p> <p>Pipette Conical flask Indicator Dropping bottle</p>	

3	Reagents: Hydrochloric Acid, 1N Methyl orange indicator solution Distilled water	A-4, Determination of sodium Hydroxide
	Glassware: Burette Conical flask Measuring cylinder Indicator Dropping bottle	
	Reagents: Weighing Balance Con. Nitric Acid Standard Silver nitrate solution, 0.1N Nitrobenzene Std Ammonium Thiocyanate Solution, 0.1N Ferric Ammonium sulphate indicator saturated solution Distilled water	A-5, Determination of Chlorides
	Glassware: Conical flask Measuring cylinder Pipette	
5	Reagents: Weighing Balance Hot Plate Hot Air Oven Conc. Hydrochloric Acid Barium Chloride solution, 10 Percent Distilled water	A-6, Determination of Sulphates
	Glassware: G No.4 Glass crucible Measuring cylinder Filtration assembly with vacuum pump	

6	Reagents: Dilute sulphuric Acid, 5N Ammonium molybdate solution, 1N Sodium citrate solution Anhydrous sodium sulphite 1-amino-2-naphthol-4-sulphonic acid Sodium bisulphite Sodium Carbonate, Anhydrous Standard Silicate solution Distilled water	A-7, Determination of Silicates
	Glassware/Equipment Polyethylene bottle Volumetric plastic bottle Single marked pipette Nessler Cylinders or Spectrophotometer Weighing Balance	
7	Reagents: Conc. Hydrochloric Acid Ammonium persulphate Potassium Thiocyanate	A-8, Determination of Iron
	Solution or Ammonium Thiocyanate solution Ferrous Ammonium Sulphate Con. Sulphuric Acid Potassium Permanganate Distilled Water	
	Glassware/Equipment Nessler cylinder Pipette Water bath	
8	Reagents: Conc. Sulphuric Acid Litmus paper Ammonium Chloride Conc. Ammonium Hydroxide Citric Acid Solution Gum Acacia Suspension Tetrasodium Pyrophosphate solution Sodium Diethyl Dithiocarbamate solution Copper sulphate pentahydrate Distilled water	A-9, Determination of Copper

	Glassware/Equipment Nessler Cylinders Weighing Balance Beaker Measuring cylinder Hot Plate Gooch Crucible with asbestos mat Filtration assembly with vacuum pump PH Meter	
9	Reagents: Distilled water Phosphoric Acid,85 percent Potassium periodate Manganese sulphate monohydrate Conc.Sulphuric Acid	A-10, Determination of Manganese
	Glassware/Equipment Weighing Balance Nessler Cylinders Beaker Measuring cylinder Hot Plate	
10	Reagents: Method A Ferrous ammonium sulphate solution Sulphuric Acid,1:1 (v/v) Potassium permanganate solution 0.1N Potassium Permanganate solution,0.02N	A-11, Determination of chlorates and perchlorates (as Sodium Chlorate) There are two methods namely method A and method B have been prescribed.
	Glassware/Equipment Weighing Balance Beaker Conical flask Hot Plate Bunsen valve	
11	Reagents: Conc.Hydrochloric Acid Distilled water	A-12, Determination of matter insoluble in water

	Glassware/Equipment Weighing Balance Beaker Measuring cylinder Glass rod Hot Plate Sintered glass crucible Hot Air Oven	
12	Reagents: Nitric Acid, 10 percent Stannous chloride Conc. Hydrochloric acid Distilled water Tin metal Potassium Permanganate Mercuric Chloride, AR grade Hydroxylamine hydrochloride Conc. Nitric Acid, AR Grade Potassium dichromate	A-13, Determination of Total Mercury (as Hg) Mercury analyzer method is a reference method or by ICP method.
	Glassware/Equipment AAS with Hydride generator attachment Weighing Balance Hot Plate Beakers Volumetric flask Pipette	

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

**ANNEX-B
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(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 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 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 licence, shall be marked on the packages/containers of Caustic Soda or printed on the label applied to it, provided always that the product so marked conform to requirements of the specification.
 - 3.1** Packing and marking shall be done as per the provision of IS 252:2013. In addition, the following details shall be mentioned on each container/package:
 - a) BIS Licence No. CM/L _____.
 - b) BIS website details i.e –“For details of BIS certification please visit www.bis.gov.in”.
 - 3.2** The precaution in handling and storing shall be observed as per cl. 4.0 of 252:2013.
- 4. CONTROL UNIT** - For the purpose of this scheme the material processed at a time in one pot shall constitute a control unit.
- 5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of the 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 the provisions of BIS Act, 2016. A separate record shall be maintained giving information relating to the rejection of the control units of the Caustic Soda not conforming to the specification and the method of their disposal. Such material, if packed, shall in no case be stored together with that conforming to the specification.

**Table 1 (Levels of Control)
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(Scheme of Inspection and Testing)

(1)				(2)	(3)			
Test Details				Test equipment requirement R: required (or) S: Sub- contracting permitted	Levels of Control			
Cl.	Requirement	Test Method			No. of Sample		Frequency	Remarks
		Clause	Reference		Solid	Lye		
3.1 & 3.1.1	Form and Description	3.1 & 3.1.1	IS 252:2013	R	Two	Two	Each Control Unit	
3.2	Relative Density* or concentration	-	IS 4016	R	-	One	-do-	
3.3, 3.4 & Table 1	Sodium Carbonate	A-3	IS 252:2013	R	Two	One	-do-	
3.1.1, 3.3 & 3.4 & Table 1	Sodium hydroxide Grade 1, Grade 2, Solid	A-4	-do-	R	Two	One	-do-	Test for Grade 1 and Grade 2 are applicable for lye only
-do-	Sodium hydroxide (as NaOH) on dry basis	A-14	-do-	R	Two	One	-do-	
3.3, 3.4 & Table 1	Chlorides (as Cl)	A-5	-do-	R	One for each requirement	One for each requirement	-do-	
-do-	Sulphate, (as SO ₄)	A-6	-do-	R	-do-	-do-	-do-	
-do-	Silicate (as SiO ₂)	A-7	-do-	R	-do-	-do-	-do-	
-do-	Iron, (as Fe)	A-8 & A	-do-	R	-do-	-do-	-do-	

		15						
-do-	Copper (as Cu)	A-9& A 15	-do-	R	-do-	-do-	-do-	
-do-	Manganese (as Mn)	A- 10 & A 15	-do-	R	-do-	-do-	-do-	
-do-	Chlorates and perchlorate	A-11	-do-	R	-do-	-do-	-do-	
-do-	Matter insoluble in water	A-12	-do-	R	-do-	-do-	-do-	
-do-	Total mercury	A-13	-do-	S	One	One	Once in three months	

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.

* The relative density of caustic soda lye shall be subject to an agreement between the purchaser and the supplier.