



उत्पाद मैनुअल

Caustic Potash - Specification

IS 6831:2023 के अनुसार

PRODUCT MANUAL FOR Caustic Potash - Specification

ACCORDING TO IS 6831:2023

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 6831:2023
	शीर्षक Title	:	Caustic Potash - Specification
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Samples of each grade to be tested
c)	नमूने का आकार Sample Size	:	1 kg
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		
	All tests		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 6831:2023 with the following scope:		
	Name of the product	Caustic Potash	
	Varieties/Type/Grades etc.	1. Pure 2. Analytical Reagent (AR) 3. Electronic Grade (ER)	

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
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ANNEX – A

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Total Alkalinity Clause 4.2, Table-1 (i)	Standard Hydrochloric Acid, Methyl Orange indicator, Weighing balance, Conical flask
2	Carbonates Clause 4.2, Table-1 (ii)	Method A: Double indicator method Standard Hydrochloric Acid, Methyl Orange indicator, Phenolphthalein indicator, Weighing balance, Conical flask Method B: Gaseometric method Distilled water, Hydrochloric acid, Sodium chloride, Sulphuric acid, Methylorange, Sodium hydroxide, Apparatus as per Annex A.4.2.2
3	Chlorides Clause 4.2, Table-1 (iii)	Method A: Turbidity method Nessler cylinder (100 ml capacity), Dil. Nitric acid, Silver nitrate, Potassium chloride, Analytical balance, chloride free water Method B: Volumetric method Silver nitrate, Potassium thiocyanate, Ferric nitrate, Potassium chloride, Conc. Nitric acid, Nitrobenzene, Analytical balance, dark coloured bottle, standard Silver nitrate solution Alternate method using Ion Chromatography Equipment Anion Guard Column — A protector of the separator column. Anion Separator Column — Suitable for selective separation of ions under analysis. Anion Suppressor Device — Anion micromembrane suppressor is used to analyse the data. Detector — Conductivity detector. Software - Software suitable for control of various operating parameters, receiving inputs and analysis of all data. Sample loop of 100 µl, 200 µl, 500 µl or 1 000 µl be used to determine ionic concentration as per instrument manual and practice. Reagents Glass or Polyethylene Sample Bottles Distilled Water or Deionized Water free from the Anions of Interest Eluent- 1.7 mM of sodium bicarbonate and 1.8 mM of

		sodium carbonate solution is used. For preparation of these solution, 0.285 6 g of sodium bicarbonate and 0.381 6 g of sodium carbonate is dissolved in 2 litre of water. Micromembrane Suppressor Solution - (0.025 N of sulphuric acid) Dilute 2.8 ml of concentrated Sulphuric acid in 4 litre of water. Standard Solutions Chloride - Dissolve NaCl, 1.648 5 g in 1 litre of reagent water.
4	Sulphates Clause 4.2, Table-1 (iv)	Nessler cylinders (50 ml capacity), Dil. Hydrochloride acid, Bariumchloride, Potassium sulphate, Analytical balance, distilled water Alternate method using Ion Chromatography Equipment Anion Guard Column — A protector of the separator column. Anion Separator Column — Suitable for selective separation of ions under analysis. Anion Suppressor Device — Anion micromembrane suppressor is used to analyse the data. Detector — Conductivity detector. Software - Software suitable for control of various operating parameters, receiving inputs and analysis of all data. Sample loop of 100 µl, 200 µl, 500 µl or 1 000 µl be used to determine ionic concentration as per instrument manual and practice. Reagents Glass or Polyethylene Sample Bottles Distilled Water or Deionized Water free from the Anions of Interest Eluent- 1.7 mM of sodium bicarbonate and 1.8 mM of sodium carbonate solution is used. For preparation of these solution, 0.285 6 g of sodium bicarbonate and 0.381 6 g of sodium carbonate is dissolved in 2 litre of water. Micromembrane Suppressor Solution - (0.025 N of sulphuric acid) Dilute 2.8 ml of concentrated Sulphuric acid in 4 litre of water. Standard Solutions Sulphate - Dissolve 1.81 g of potassium sulphate in 1 litre of reagent water.
5	Phosphates Clause 4.2, Table-1 (v)	Nessler cylinder (50 ml capacity), Dil. Sulphuric acid, Ammonium molybdate, p-methyl aminophenol sulphate, Potassium metabisulphite, Potassium dihydrogen phosphate, Analytical balance, platinum dish, distilled water, water bath
6	Iron Clause 4.2, Table-1 (vi)	Nessler cylinder (50 ml capacity), Conc. Hydrochloric acid, Ammonium persulphate, Butanolic Potassium thiocyanate,

		Dil. Sulphuric acid, Ammonium ferrous sulphate, Analytical balance, hot plate ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
7	Heavy metals Clause 4.2, Table-1 (vii)	Nessler cylinder (50 ml capacity), Dil. Hydrochloric acid, Dil. Ammoniumhydroxide, Potassium cyanide, Glacial Acetic acid, Hydrogen sulphide (sol.), Lead nitrate, Analytical balance, distilled water ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
8	Insoluble matter Clause 4.2, Table-1 (viii)	Carbon dioxide free water, Gooch crucible, Steam bath, Oven
9	Sodium Clause 4.2, Table-1 (ix)	Flame photometer, Sodium chloride, Measuring flask, galvanometer, Deionized water, Volumetric flask ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
10	Arsenic Clause 4.2, Table-1 (x)	Method A: Modified Gutzeit method Modified Gutzeit apparatus as per Fig. 1 of IS 2088 Method B: Silver diethyldithiocarbamate method Evolution and Absorption apparatus, Spectrophotometer/Photoelectric Absorptiometer Common reagents for both the methods: Lead acetate, Lead acetate paper strips, Mercuric bromide, Dil. Sulphuric acid, Conc. HCl, Potassium iodide, Stannous chloride, Zinc granules, Arsenic trioxide, Silver diethyldithiocarbamate

		ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
11	Nitrates Clause 4.2, Table-1 (xi)	Dil. Sulphuric acid, Conc. HCl, Potassium nitrate, Conc. Sulphuric acid, Indigo carmine Dil. Ammonium hydroxide, Analytical balance, Heating mantle, filtration by suction arrangement Alternate method using Ion Chromatography Equipment Anion Guard Column — A protector of the separator column. Anion Separator Column — Suitable for selective separation of ions under analysis. Anion Suppressor Device — Anion micromembrane suppressor is used to analyse the data. Detector — Conductivity detector. Software - Software suitable for control of various operating parameters, receiving inputs and analysis of all data. Sample loop of 100 µl, 200 µl, 500 µl or 1 000 µl be used to determine ionic concentration as per instrument manual and practice. Reagents Glass or Polyethylene Sample Bottles Distilled Water or Deionized Water free from the Anions of Interest Eluent- 1.7 mM of sodium bicarbonate and 1.8 mM of sodium carbonate solution is used. For preparation of these solution, 0.285 6 g of sodium bicarbonate and 0.381 6 g of sodium carbonate is dissolved in 2 litre of water. Micromembrane Suppressor Solution - (0.025 N of sulphuric acid) Dilute 2.8 ml of concentrated Sulphuric acid in 4 litre of water. Standard Solutions Nitrate Stock Solution - Dry approximately 2 g of sodium nitrate (NaNO₃) at 105 °C for 24 h. Dissolve exactly 1.370 7 g of the dried salt in reagent water, and dilute to 1 litre with reagent water in a volumetric flask.
12	Silicates Clause 4.2, Table-1 (xii)	Nessler cylinders (50 ml capacity), Dil. Sulphuric acid, Ammonium molybdate, Sodium citrate, Potassium metabisulphite, Sodium carbonate(anhydrous), Pure silica, Platinum crucible, Bunsen burner
13	Aluminium Clause 4.2,	Nessler cylinders (50 ml capacity), Dil. Acetic acid, Ammonium Aurine

	Table-1 (xiii)	Tricarboxylate, Ammonium carbonate, Aluminium ammonium sulphate, Ammonium acetate ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
14	Ammonium salts Clause 4.2, Table-1 (xiv)	Nessler solution, Ammonium chloride
15	Calcium & Magnesium Clause 4.2, Table-1 (xv)	Calcium carbonate, Oven, Graduated flask, EDTA, Eriochrome Black T indicator, Ammonium chloride – Ammonium Hydroxide buffer sol., ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
16	Nickel Clause 4.2, Table-1 (xvi)	Nessler cylinder (50 ml capacity), Citric acid (crystal), Dil. Ammoniumhydroxide, Dimethyl glyoxime, Nickel ammonium sulphate ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20 Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
17	Zinc Clause 4.2, Table-1 (xvii)	Nessler cylinder (50 ml capacity), Citric acid (crystal), Dil. Ammonium hydroxide, Resorcinol sol., Thymol blue indicator, Chloroform, Dithizone, HCl, Ammonium chloride, Potassium ferrocyanide, Zinc granules, standard Hydrochloric acid ALTERNATE METHOD: INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETER (ICP-OES) METHOD ICP-OES Instrument as given in A-20

		Reagents and Solutions Nitric Acid (65 percent) Suprapure Standard Stock Solution
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The list above is indicative only and may not be considered as exhaustive

ANNEXURE - B

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 and implement 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 marked on each container of Caustic Potash provided always that the product contained in each container on which this mark is applied conforms to every requirement of the specification.

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

- i) Licence No. (CM/L... ..)
- ii) BIS website details: www.bis.gov.in

4. CONTROL UNIT: For the purpose of this product, whole production carried out in a day shall constitute a control unit.

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.

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 required (or) S: Subcontracting permitted	Levels of Control		
Clause No.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.1	Description	3.1	IS 6831	R	Firm to have adequate in-process controls to ensure compliance to this parameter of the Indian Standard and appropriate records shall be maintained for evidence of conformity		
4.2, Table 1 i)	Total Alkalinity (as KOH)	A-3	-do-	R	one	Each Control unit	
ii)	Carbonates (as K ₂ CO ₃)	A-4	-do-	R	one	Each Control unit	
iii)	Chlorides (as KCl)	A-5 or A-21	-do-	R	one	Each Control unit	
iv)	Sulphates (as K ₂ SO ₄)	A-6 or A-21	-do-	R	one	Each Control unit	
v)	Phosphates (as PO ₄)	A-7	-do-	R	one	Each Control unit	
vi)	Iron (as Fe)	A-8 or A-20	-do-	R	one	Each Control unit	
vii)	Heavy metals (as Pb)	A-9 or A-20	-do-	S	one	Once a month	
viii)	Insoluble matter	A-10	-do-	R	one	Each Control unit	
ix)	Sodium (as Na)	A-11 or A-20	-do-	R	one	Each Control unit	
x)	Arsenic (as As)	A-12 or A-20	-do-	R	one	Each Control unit	For Pure Grade, If required by the purchaser, the limit for arsenic shall be as agreed to between the purchaser and the supplier

xi)	Nitrates (as NO ₃)	A-13 or A-21	-do-	R	one	Each Control unit	
xii)	Silicates (as SiO ₂)	A-14	-do-	R	one	Each Control unit	
xiii)	Aluminium (as Al)	A-15 or A-20	-do-	R	one	Each Control unit	
xiv)	Ammonium salts (as NH ₄)	A-16	-do-	R	one	Each Control unit	
xv)	Calcium & Magnesium (as Ca)	A-17 or A-20	-do-	R	one	Each Control unit	
xvi)	Nickel (as Ni)	A-18 or A-20	-do-	R	one	Each Control unit	
xvii)	Zinc (as Zn)	A-19 or A-20	-do-	R	one	Each Control unit	

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.